JULY 1966

REVIEW OF MANAGEMENT PRACTICES AND MANPOWER UTILIZATION

IN THE FOREST SERVICE

JOINT MANAGEMENT IMPROVEMENT AND MANPOWER REVIEW TEAM

Department of Agriculture - Civil Service Commission

Bureau of the Budget

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THE SURVEY IN BRIEF

Purpose of Survey

This is the report of a joint team designated by the Secretary of Agriculture, Director of the Bureau of the Budget and Chairman of the Civil Service Commission to review management policies and practices in the Forest Service. The review was conducted during the period of February 15 to July 2, 1965, as a part of the President's program for improved management and manpower control.

The membership of the survey team was as follows:

Chairman:	Edwin Deckard	Bureau of the Budget
Members:	Theodore H. Anderson	ASCS, Dept. of Agriculture
	Floyd W. Campbell	SCS, Dept. of Agriculture
	John E. Campion	Civil Service Commission
	Sydney C. Freeman	Bureau of the Budget
	Ronald H. Landis	Bureau of the Budget
	Joseph P. Loftus	B&F, Dept. of Agriculture

Method of Study

Survey methods included extensive interviewing, review of organizational and functional data, analysis of operating statistics and reports, questionnaires, and observations of work. During the four and one-half months devoted to the survey, five and one-half weeks were spent in the field, at which time the team visited all Regional Offices except Region 10 in Alaska, including a good sampling of Forests and Districts in most of them. The team also visited seven of the ten Experiment Stations and a sampling of field research locations.

After analysis of data collected during the review, the team spent two days at a site in the George Washington National Forest with the Chief of the Forest Service and the Associate Deputy for Administration to discuss findings and tentative recommendations. This was followed by two weeks of conference in headquarters with the Chief and several members of his staff to get their participation in the development of the final recommendations. The two day retreat and the two weeks of conference were invaluable in the process of making choices between alternatives and establishing the groundwork for effective implementation of recommendations by the Forest Service.

The official response to the draft report has been included as "Agency Action" following each of the recommendations. In addition, a statement of progress as of May 31, 1966, is included as "Progress" following each recommendation.

The team wishes to acknowledge the very fine cooperation and participation of officials at all levels in the Forest Service. District Rangers, Forest Supervisors, Regional Foresters, Research Directors, Headquarters officials, and staff members at all levels made many good suggestions and gave freely of their counsel and experience for the guidance of the survey team. Of special importance was the cooperative climate established by Mr. Edward P. Cliff, Chief of the Forest Service, and the open discussion which the team had with him and his objective consideration of all suggestions. Also, the team greatly appreciates the skill and judgment of Mr. Gordon Fox who served as liaison with them throughout the survey.

Highlight Impressions

The team was greatly impressed with the management climate, the esprit de corps, and the many management efforts currently under way in the Forest Service. The Service obviously has a proud tradition of excellent achievement which sustains an enthusiastic and dedicated team at all levels in the organization.

The Forest Service is a responsive organization. Its achievements in new programs such as the Job Corps Program and Accelerated Public Works Program have been outstanding. The Service appears to be equally responsive to internal or external suggestions for improvement, Departmental policy guidance, and the needs of the public.

The high quality of the Forest Service management of the natural resources of land, timber, water and wildlife in contrast to the neglect of similar resources managed by private and other public agencies appeared quite obvious, even to non-professionals, as the team traveled thousands of miles over public and private lands during this review. Unquestionably the lands under Forest Service jurisdiction are in competent hands and their value is being enhanced and preserved for the generations to follow.

The search for management and program improvements receives priority attention at all levels in the Service. There are many on-going projects at the national level and many more in the field. There is a constant research for more efficient reforestation methods, better revegetation practices, improvements in water

yield, etc. There are many management improvement efforts under way such as the Region 3 project on accounting and accomplishment reporting, a Service-wide study of the management information system, a study of the utilization of engineers, and a recent review of timber sale contracts and accounting.

It is in the setting of this Service-wide interest in improvement that this review was conducted.

Summary of Recommendations

Following are the highlights of the forty-nine recommendations made in this report. In each case, the page is referenced where the recommendation is discussed in greater detail. Throughout the report, recommendations are preceded by findings and discussion.

- Sharpen the role of the four levels of the organization for National Forest Administration. (p. 17)
- Strengthen line and staff organization at all levels. (p. 22)
- Establish a single Associate Chief position to assist the Chief in the line direction of the Service. (p. 25)
- Establish in each Regional Office a small program planning staff. (p. 27)
- Establish capability at the District level to take final action on all but the most unusual or complex work. (p. 28)
- Delegate greater decision-making authority to the lower levels of the Service. (p. 28)
- Discourage excessive organizational specialization. (p. 31)
- Simplify the inspection system. (p. 33)
- Change the concept of the Ranger position from working supervisor to manager. (p. 41)

- Increase size of Districts by using acres to focus on maximum size, and staff to focus on minimum size. (p. 43)

- Increase the size of Forests by using eight optimum size Districts as the ideal measure for determining size. (p. 54)

- Reduce the number of Regional Offices by using eighteen optimum size Forests as the ideal measure for determining size. (p. 59)

- Establish a new State and Private Forestry organization, independent of the Regional Forester and his staff, reporting direct to the Washington Office and with the field offices co-located with Experiment Stations. (p. 63)

- Continue efforts to reduce the number of Experiment Stations and field project locations. (p. 75)

- Simplify expenditure accounting, fiscal data collection and processing and voucher review. (p. 83)

- Establish a mandatory planned experience training program for professionals. (p. 90)

- Establish more restrictive criteria for the decentralization of the personnel function to Forests. (p. 91)

- Expand the Workload Analysis system to include accomplishment reporting keyed to work plans, and reduce the number of work items. (p. 92)

- Strengthen the system for directives control at headquarters and Regional Offices. (p. 96)

- Provide greater depth and strength in the ADP organization. (p. 99)

- Render ADP service to existing Regions 2 and 3 with owned ADP equipment. (p. 100)

- Reconcile jurisdiction between the Forest Service and the Office of the Inspector General for audit and investigative work. (p. 107)

- Use GSA motor pool services wherever reasonably available within the context of a coordinated system. (p. 108)

- Correct irregular landownership patterns by exchange. (p. 111)

- Simplify the land purchase and exchange procedures. (p. 115)
- Concentrate the landownership adjustments functions in a specialized staff at each Regional Office. (p. 115)
- Give greater attention to the establishment of an inter-Departmental grazing fee system based on fair market value. (p. 121)
- Stimulate maximum use of concessionaires, contractors, and cooperative agreements in meeting recreation needs. (p. 125)
- Conduct a cost-benefit study of the summer home program. (p. 127)
- Shape timber resource management policies and practices in terms of the multiple use values and capabilities of the resource base. (p. 131)
- Study benefits of advance access road construction with appropriated funds compared to construction by timber purchasers. (p. 142)

I

RESOURCES FOR MANAGING

- MISSION
- ORGANIZATION
- RESOURCE AND PROGRAM TRENDS

I

RESOURCES FOR MANAGING

A. MISSION

From its establishment in 1905 the Forest Service has been responsible for promoting the conservation and best use of public lands committed to its care. Such lands now aggregate about 186 million acres in 41 States and Puerto Rico. Specific legislation providing for the research program was enacted in 1928. General forestry assistance to provide technical guidance to private landowners, States, and other public agencies, initiated in 1905, has been broadened by a series of laws providing Federal grants and cost-sharing for cooperative fire control, tree planting, and other purposes.

Principles guiding the productive use of Forest Service lands are set forth in the Multiple Use-Sustained Yield Act in 1960. In accordance with this legislation, current management objectives provide for (1) sustained timber yield, (2) range improvement for livestock grazing, (3) watershed management for power, irrigation, navigation, municipal water supply and other needs, (4) maintenance of wildlife resources, and (5) a variety of recreational facilities for public enjoyment of the forest environment.

In broad perspective, the agency's program involves three main lines of work:

1. Management, protection, and development of the National Forests and National Grasslands, administered through 10 Regional Offices, 130 Forest Supervisor Offices, and 822 Ranger Districts.

2. Forestry research broadly applicable to the entire field of forestry (public and private), administered through 10 Experiment Stations and 75 Project Centers and Laboratories, where 325 projects are currently being carried forward in 22 different fields of investigation.

3. Cooperation with State agencies and private forest owners to better protect the state and privately-owned forest lands from fire, insects, and diseases, encourage better forestry practice, and stimulate forestry resources in this area of the national economy. Importance of this function is reflected in the summary data below:

OWNERSHIP OF COMMERCIAL FOREST LAND IN U.S.

	Acreage	Proportion
Forest Service	96,804,000	19%
Other Public	45,064,000	9%
Forest Industry	66,628,000	13%
Farm and Miscellaneous	300,349,000	59%
	508,845,000	100%

B. ORGANIZATION

The Secretary of Agriculture has delegated general direction and supervision of the Forest Service to the Assistant Secretary for Rural Development and Conservation.

Under his broad direction, the Chief of the Forest Service is empowered to direct and supervise all activities of the Service for National Forest purposes.

Headquarters. In Washington the Chief of the Forest Service is supported by six Deputy Chiefs, each assigned functional responsibility in one of the areas indicated below.[1/]

Administration

Forestry Research

National Forest Protection and Development

National Forest Resource Management

Programs and Legislation

State and Private Forestry

Line authority exercised by the Chief is shared with his Deputy Chiefs by direct delegation and administrative practice, such as periodic rotation as Acting Chief when each may sign correspondence or other documents in that capacity. Each Deputy Chief also has general direction and supervision of functions assigned in his area of responsibility. Division Directors have delegated authority for technical guidance of functional activities, limited generally to operating procedures within established basic policy.

Regional Offices. The line officer responsible to the Chief for all Forest Service activities, except research, in each of 10

1/ See organization chart, Exhibit A, which identifies subordinate Divisions.

geographic areas is the Regional Forester. The degree of his responsibility and authority for specific actions and decisions is defined in the Forest Service Manual. In several Regions the position of Deputy Regional Forester has been established.

Supporting staff includes division directors, some of whom are designated as Assistant Regional Foresters. These are functional staff officers. Assistant Regional Foresters, however, also serve as Acting Regional Forester during recurrent rotation periods. They may, in practice, exercise line authority shared with the Regional Forester under specific delegation. Except for the program of State and Private Forestry conducted through the Regional Offices (and involving liaison with State agencies), all other activities involve administration of the National Forest System.[2/] National Forests within each Region range from 7 to 19.

Forest Supervisor Offices. Forest Supervisors are the line officials responsible to the Regional Forester for direction and control of activities on 155 National Forests administered from 130 Forest Supervisor Offices. The Forest Supervisor is assisted by functional staff officers who exercise authority for technical and procedural matters in functions assigned.[3/] Within each National Forest are Ranger Districts which usually range in number from 4 to 12.

2/ See organization chart Exhibit B which typifies Regional Office structure. Variations exist between Regions.

3/ See organization chart Exhibit C which typifies National Forest office structure.

Ranger District Offices. District Rangers are the line officers responsible to Forest Supervisors for executing land management plans and programs on each of 822 Districts. Staff assistance to the Ranger may vary in number and in professional competence depending on workload engendered by timber, range, or watershed management and the impact of wildlife, recreation, and roadbuilding activities. Full-time assistants may range from 1 person to more than 30 in a few of the larger Districts.

Delegations. While line officers at the four levels of organization in National Forest Administration (Headquarters, Region, Forest, and District) ostensibly receive authority commensurate with their responsibilities, the limitations imposed in the Forest Service Manual qualify such delegations in specific terms. The net effect of such limitations is extensive review and approval actions at the echelon above each subordinate level.

Experiment Stations.[4/] The research program in the field is separate from the structure provided for National Forest Administration and State and Private Forestry activities. Experiment Station Directors in 10 different regions are line officers responsible to the Chief for all research activities assigned to them. Assistant Directors comprise the immediate staff of each Director and discharge line responsibilities in directing research projects assigned to Research Project

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4/ See organization chart Exhibit D which typifies Station structure.

leaders, located at the Stations or at the 75 Project Centers and Laboratories dispersed among the 10 regions headed by Station Directors.

The Forest Products Laboratory in Madison, Wisconsin, is a separate research unit, the Director of which reports direct to the Washington Office. The Institute of Tropical Forestry in Puerto Rico has similar status.

C. RESOURCE AND PROGRAM TRENDS

In its three major program areas the Forest Service has outlined long-range plans which serve to evaluate current status and project future needs. These documents are:

1. Development Program for the National Forests (USDA Miscellaneous Publication No. 896, November 1961)
2. A National Forestry Research Program (USDA Miscellaneous Publication No. 965, May 1964)
3. A USDA Program for Forest Lands in State, Local, and Private Ownerships (Unpublished Draft, 1965)

The program for the National Forests anticipates more intensive multiple use of the 186 million acre land-base. Water, timber, recreation, forage, and wildlife habitat are regarded as renewable resources to be developed and maintained for continual, orderly use. By 1972, and over the 10-year period of the development program, needs to be met include:

- Timber harvest of 13 billion board feet, an increase from nearly 11 billion in 1964.

Recreation facilities to accommodate an estimated 195 million visits as compared with nearly 134 million in 1964. Present family units on campgrounds and picnic sites number about 75,400; these would be increased by 263,000 units to relieve current over-usage and meet projected trends. This would entail nearly 28,000 new campground and picnic sites. Passage of the Land and Water Conservation Fund Act in 1964 promises to further stimulate outdoor recreational activity.

Soil and water management projects for erosion control on 1.3 million acres and 22,000 miles of gullies and roads, together with construction of 570 pollution control and flood prevention projects.

Construction of 46,400 miles of roads and 8,000 miles of trails, in addition to maintenance on an existing system of 162,400 miles of roads and 106,500 miles of trails.

The development plans contemplate that receipts from timber sales and other services will increase from $137.5 million in 1964 to $165 million in 1972. Social and economic benefits will also flow into communities characterized by labor surplus and low rural income adjacent to 40 percent of Forest Service lands. Overall capital value of the timber, forage, and lands is expected to increase by about **$2 billion as a result of the program.**

Projected research undertakings contemplate coordination with allied effort by private industry, other Federal agencies, schools of forestry and the State Agricultural Experiment Stations. The level of such research in recent years (1961-1962) approximated 0.35 percent of the gross national product contributed by forest products. By 1972 research expenditures of the Forest Service are expected to reach $76 million annually, nearly three times the level of 1964. If total forestry research by public and private agencies reflects similar increase by 1972, the amount would be about 1 percent of consumer expenditures

for forest products.

Research facilities are being upgraded (1) by construction of new laboratories, (2) location on university campus sites where a community of scientific interest supports such work, and (3) functional specialization whereby designated centers carry primary responsibility for major projects.

The program directed to State and Private Forestry outlines a joint effort by nine agencies of the U. S. Department of Agriculture to protect, develop, and use 395 million acres of forest land resources outside of Federal ownership. It is characterized by technical assistance and Federal cost-sharing to encourage multiple use objectives. Fifteen major activities are identified, to be accomplished by accelerating Federal expenditures from $37 million to about $97 million over a 10-year period. For each Federal dollar to be spent, State and private investment of three dollars is forecast. Forest Service funds, now at the annual level of $23 million, would be increased to $45 million in 10 years.

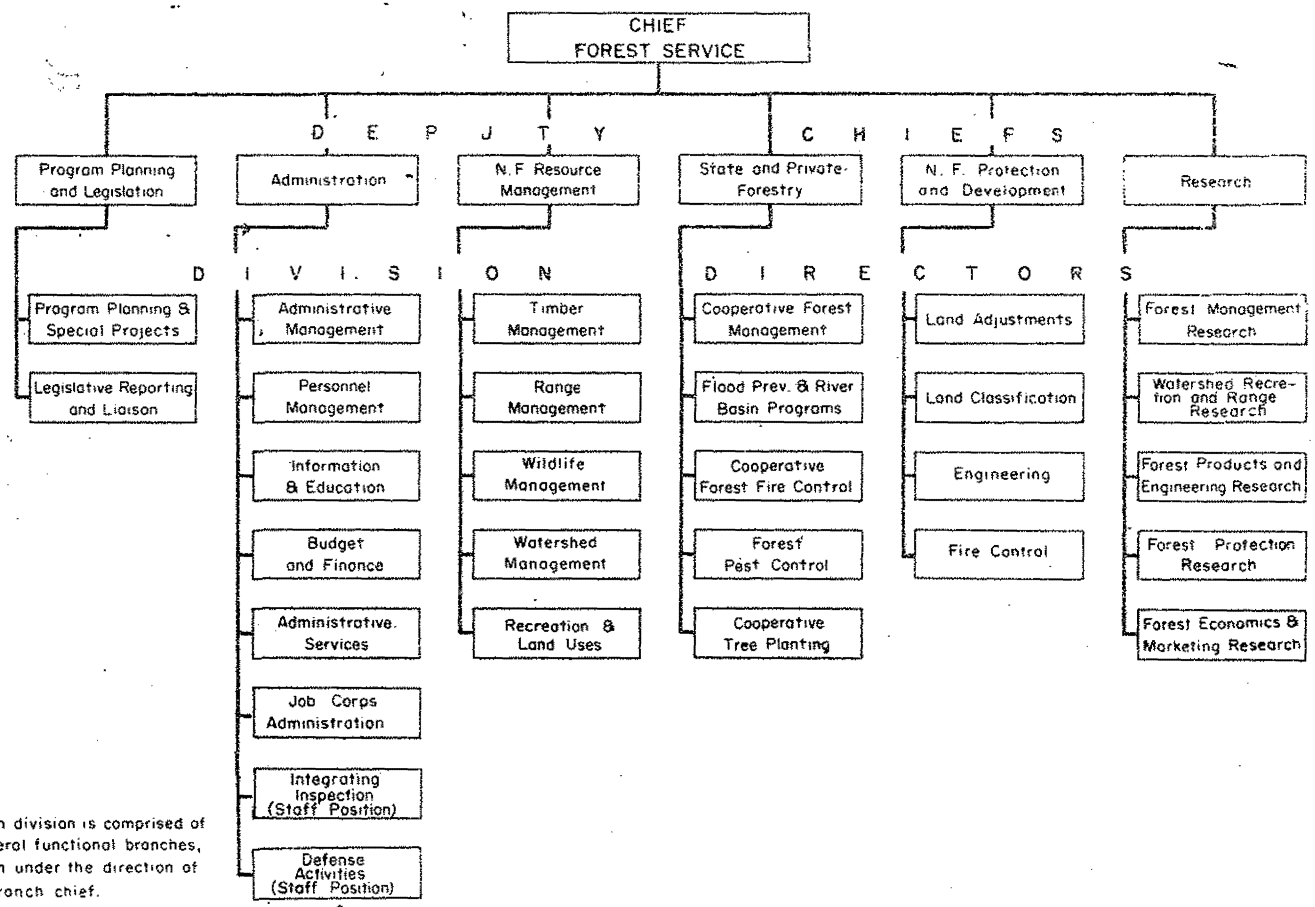
In perspective, the three combined Forest Service programs reflect actual and planned expansion as shown below:

	1955	1965	1972
Appropriations	$75.2 million	$316.1 million	$644 million
Employment(Man-years)	15,114	31,584	55,000
Receipts	$81.7 million	$141.5 million	$165 million

Based on expenditures in 1964, the Forest Service financed its operations as follows:

Headquarters Office (Washington)	.....	$ 8,863,000
Regional Offices (10)	.....	30,559,000
National Forests (130) and Ranger District Offices (822)	.....	225,135,000
Research (80 field locations)	.....	23,086,000
State and Private Forestry (grants)	.....	14,912,000
Total		$ 302,555,000

WASHINGTON OFFICE ORGANIZATION CHART



Each division is comprised of several functional branches, each under the direction of a branch chief.

EXHIBIT A

TYPICAL REGIONAL OFFICE ORGANIZATION CHART

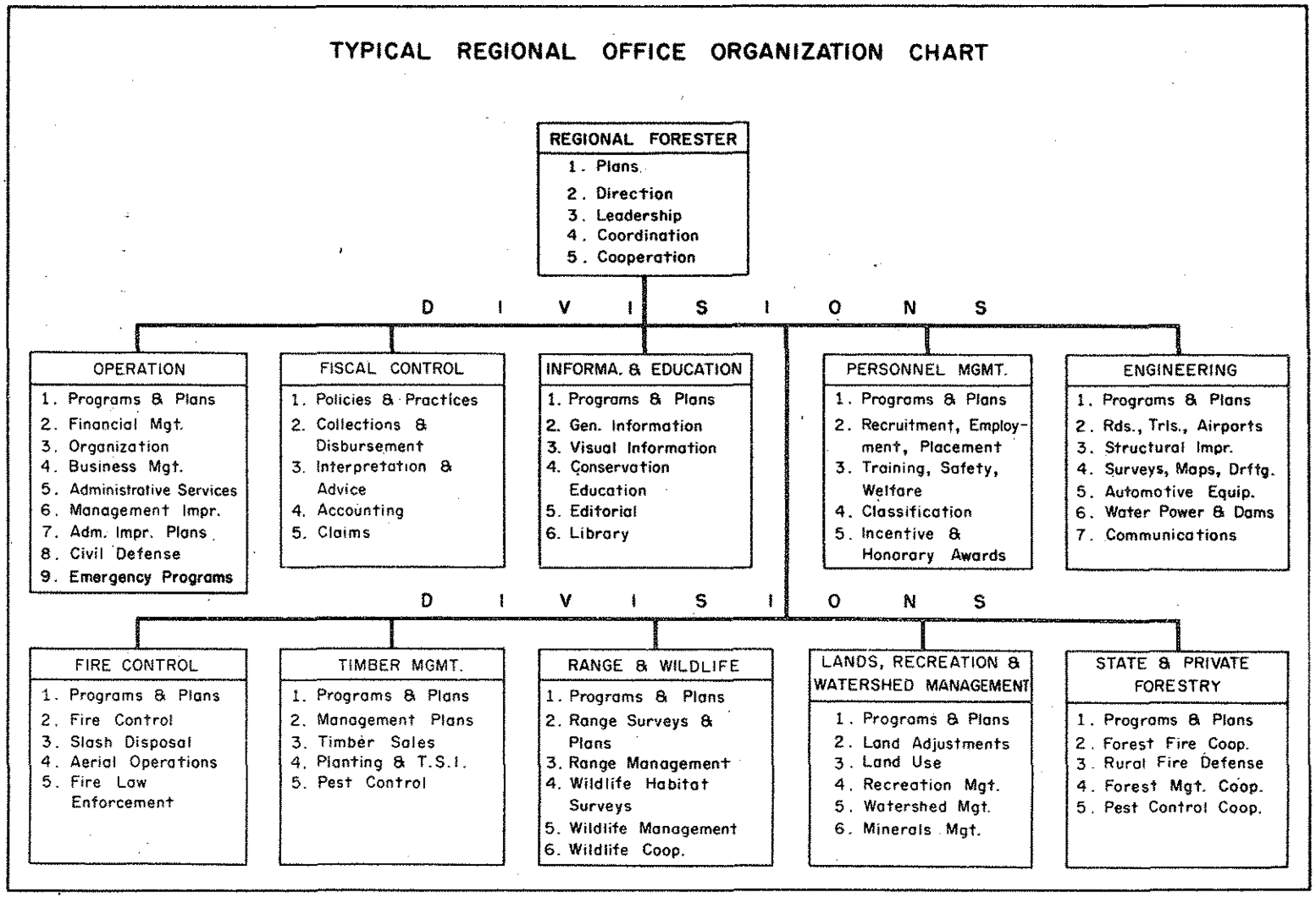


EXHIBIT B

TYPICAL NATIONAL FOREST ORGANIZATION CHART

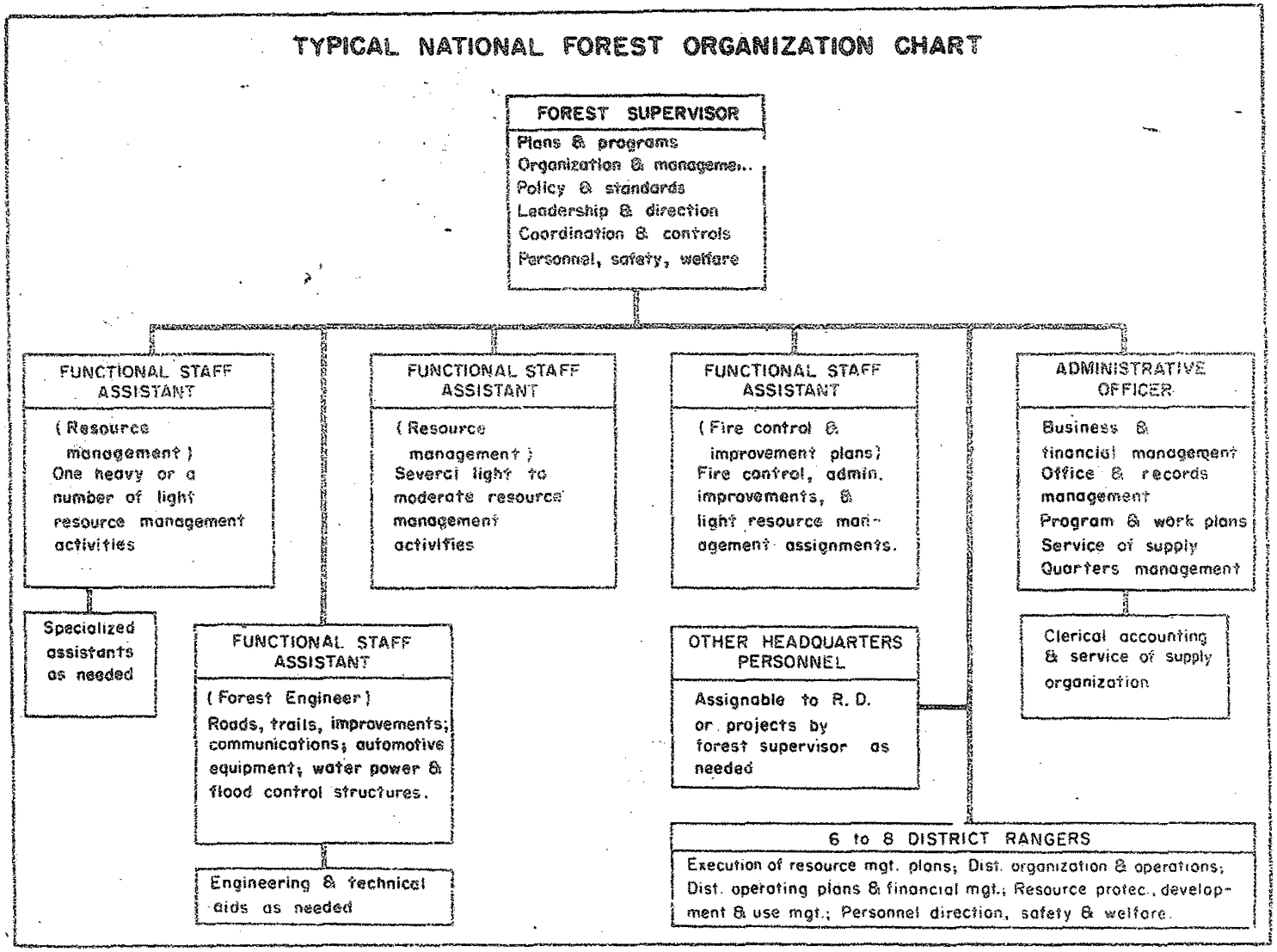

FOREST SUPERVISOR
Plans & programs
Organization & manageme..
Policy & standards
Leadership & direction
Coordination & controls
Personnel, safety, welfare
FUNCTIONAL STAFF ASSISTANT
(Resource management)
One heavy or a number of light resource management activities
FUNCTIONAL STAFF ASSISTANT
(Resource management)
Several light to moderate resource management activities
FUNCTIONAL STAFF ASSISTANT
(Fire control & improvement plans)
Fire control, admin. improvements, & light resource management assignments.
ADMINISTRATIVE OFFICER
Business & financial management
Office & records management
Program & work plans
Service of supply
Quarters management
Specialized assistants as needed
FUNCTIONAL STAFF ASSISTANT
(Forest Engineer)
Roads, trails, improvements; communications; automotive equipment; water power & flood control structures.
Engineering & technical aids as needed
OTHER HEADQUARTERS PERSONNEL
Assignable to R. D. or projects by forest supervisor as needed
Clerical accounting & service of supply organization
6 to 8 DISTRICT RANGERS
Execution of resource mgt. plans; Dist. organization & operations; Dist. operating plans & financial mgt.; Resource protec., development & use mgt.; Personnel direction, safety & welfare.

EXHIBIT C

TYPICAL REGIONAL EXPERIMENT STATION ORGANIZATION CHART

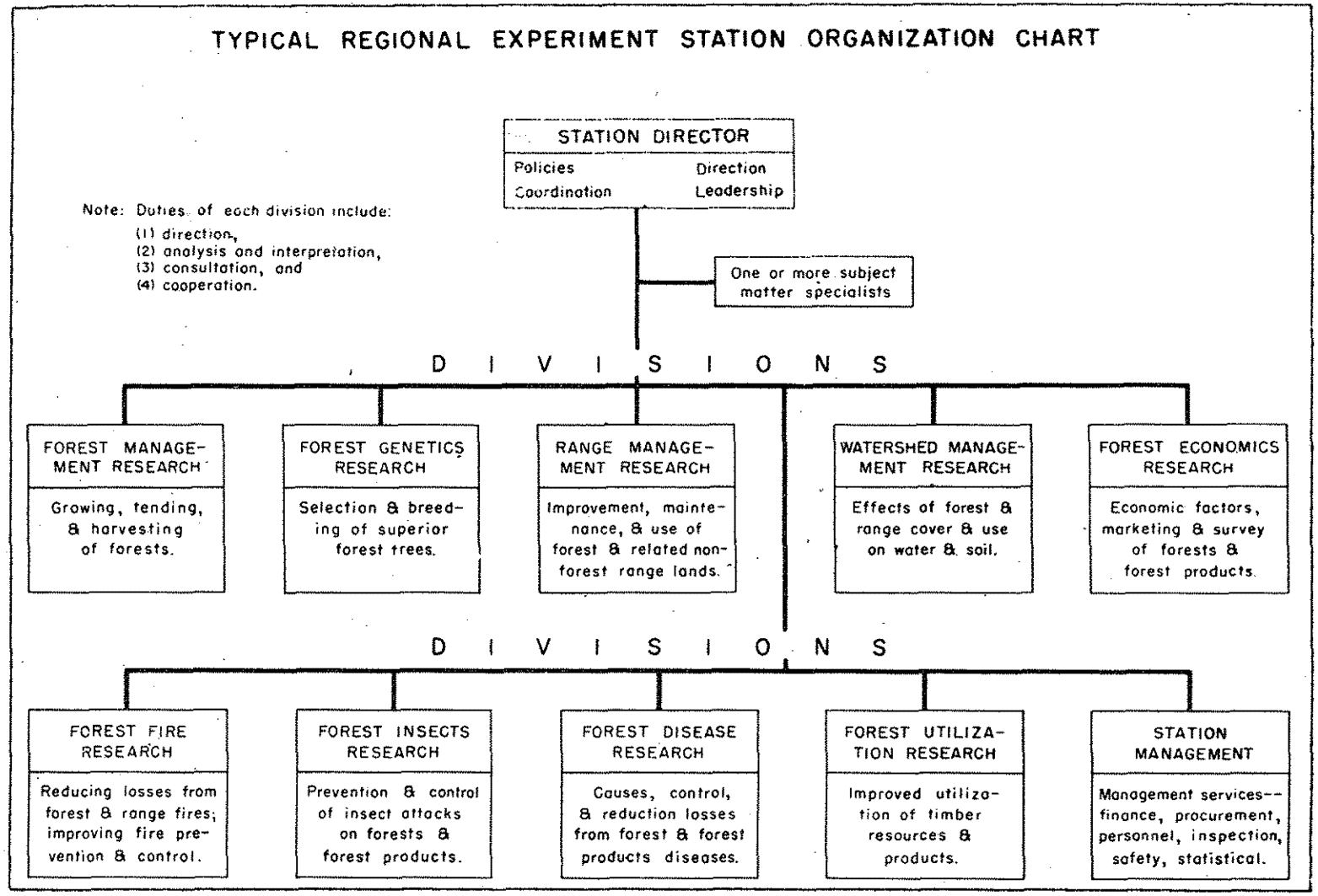

STATION DIRECTOR
Policies
Direction
Coordination
Leadership
Note: Duties of each division include:
(1) direction,
(2) analysis and interpretation,
(3) consultation, and
(4) cooperation.
One or more subject matter specialists
D I V I S I O N S
FOREST MANAGEMENT RESEARCH
Growing, tending, & harvesting of forests.
FOREST GENETICS RESEARCH
Selection & breeding of superior forest trees.
RANGE MANAGEMENT RESEARCH
Improvement, maintenance, & use of forest & related non-forest range lands.
WATERSHED MANAGEMENT RESEARCH
Effects of forest & range cover & use on water & soil.
FOREST ECONOMICS RESEARCH
Economic factors, marketing & survey of forests & forest products.
D I V I S I O N S
FOREST FIRE RESEARCH
Reducing losses from forest & range fires; improving fire prevention & control.
FOREST INSECTS RESEARCH
Prevention & control of insect attacks on forests & forest products.
FOREST DISEASE RESEARCH
Causes, control, & reduction losses from forest & forest products diseases.
FOREST UTILIZATION RESEARCH
Improved utilization of timber resources & products.
STATION MANAGEMENT
Management services--finance, procurement, personnel, inspection, safety, statistical.

EXHIBIT D

II

ORGANIZING FOR FORESTRY MANAGEMENT

- ROLE OF FOUR LEVELS
- STAFF AND LINE
- ORIENTING THE ORGANIZATION FOR MULTIPLE USE MANAGEMENT
- DELEGATIONS
- ORGANIZATION SPECIALIZATION
- INSPECTION AND CONTROL

II

ORGANIZING FOR FORESTRY MANAGEMENT

A. ROLE OF FOUR LEVELS

The management of 186 million acres of land and water resources, with a mission of developing those resources for their proper contribution to the economy and welfare of the Nation, is a tremendous undertaking. It requires an organization capable of giving service to millions of recreation users, grazing permittees, and timber purchasers on site throughout this vast domain. For this purpose there has evolved in the Forest Service a four-level organization - Headquarters, Regional Offices, Forest Supervisors' offices and District Ranger offices. This pattern has been in existence since 1908. It is responsive to the needs of the Service and has proved to be a sound organizational structure.

Organizations, like other structures, require maintenance. Men, time, and expediency erode organizations. A clear definition of roles today may become rather fuzzy two or three years from now. The last concentrated look at the organizational roles in the Forest Service was five years ago. Since then considerable erosion has taken place. It is time for a "maintenance overhaul" to assure that each level is concentrating on its primary mission and not unduly lapping over into the roles assigned other levels.

The review team subscribes to the following as the primary function of each of the four levels:

Ranger Districts: The "doing" level.

Forest Supervisor Offices: The planning level.

Regional Offices: The implementation and appraisal level.

Headquarters: The policy and program formulation level.

To make this concept operational it is necessary to be more specific, otherwise the matter would be over-simplified. The following is suggested as a more complete definition of roles:

Ranger Districts: This is the "doing" level of the Forest Service. There should be placed at this level the capability and responsibility to administer all resource management programs approved for the District with only the exceptional problems or transactions being referred to higher levels. This level should participate in long-range planning by an input of District information and judgments. (For this purpose multiple use plans are placed in the category of long-range plans.) It should prepare annual or other short-range work or resource plans consistent with the longer range plans.

Forest Supervisors' Offices: This level is the primary planning level. It actually does the long-range planning of resources management. It should not ask Districts to prepare such plans in draft and merely edit those drafts and regard this to be its planning responsibility. It should coordinate short-range and work plans to assure that full advantage is taken of opportunities

for savings and program effectiveness through the cooperative efforts of all Districts. (This coordination can be done effectively as a part of the budget administration process.) It should perform "doing" work on a Forest-wide basis where specialized skills are required and the volume within the Districts is too light or too fluctuating to make decentralization to Districts economical or effective. This level should serve as an extension of the Regional Office to oversee the implementation of new programs at the District level.

Regional Offices: This is the program implementation and review level. It should play a key extension role in translating research findings into action. It should provide for adaptation and implementation of the Chief's policies and programs of work. It should give primary attention to "pushing" new programs and policies of the Service to see that they are interpreted wisely and implemented expeditiously and with proper uniformity. This office should provide consulting service to forests as needed. It should not perform "doing" program work except in those cases where volume and fluctuation make a Regional service more effective or economical. It should not get overly involved in policy and program formulation. It should provide all administrative staff support that can be provided most economically and effectively on a centralized basis for a Regional area. The Region should be the primary program evaluation level in the Service. It is far enough from the "doing" level to be

objective and covers a wide enough area to have a good frame of reference.

Headquarters: This is the policy and program formulation level. "Doing" work should be almost nonexistent at this level. National long-range resource planning should be done here. Program evaluation by this level should concentrate on policy and program matters, supplemented as necessary with sufficient field reviews by staff members to give them the required familiarity with field conditions to do their policy and program jobs. External relationships would also be of prime concern to this level with each of the lower levels having assigned responsibilities in their areas.

1. Strengthening the District

Within the framework of the above delineation of the roles of each of the four levels, there are several areas where positive action is needed to make the organization more effective and avoid unnecessary duplication of effort. Of greatest concern is the degree of capability of Districts to take nearly complete responsibility for the "doing" work in their Districts. It is imperative that the Forest Service accept as a firm principle that Districts will be staffed with the required level of competence to make decisions and take final action on all resource management matters except the very unusual cases. The vitality of the organization and its capacity to meet the tremendous program growth ahead will be lessened considerably

unless positive action is taken now to build this capability at the District level. This must mean larger geographic areas for Districts, higher grades for Rangers and key staff, proper use of specialization, and improved professional development.

2. Planning

A second area of concern is that of planning. More will be said about this later in the report so it will suffice at this point to say that the team noted a lack of clarity of the role of the Districts as compared to the role of Forests in the planning area. Forest staffs seemed too preoccupied with the functional day-to-day operations on Districts to give proper emphasis to planning. Also, they are normally so specialized on a functional basis that multiple use planning is short-changed in favor of functional planning. In some cases the Forest role in planning seemed to be depreciated by heavy participation by Regional Office staff. In too many cases, District personnel were preparing long-range plans in complete detail with the Forest merely editing the final copy. There is room for considerable sharpening up of responsibilities at three levels in the area of planning.

3. Administrative Services

A third area in need of early attention is the question of the appropriate level from which to provide administrative staff services. Administrative staff services should accompany line management if there is sufficient volume to justify a competent level for such service and if such staff assistance is necessary to the making of day-to-day decisions. A tendency was noted to move many of these services

to the Forest and District level which do not meet this criterion. This results in unnecessary cost, permanent staffing for peak workloads, and providing an inferior level of staff advice to the line executive.

4. Other Needs

In addition to these three areas, there are several others that need attention:

a. The research extension effort is neglected. The Regional Offices should concentrate on this.

b. Program evaluation seems to be everybody's business and may as a result not be as effective as it should be. Again, this should be a primary responsibility of the Regions. Forests should play a very subordinate role in this because they are so close to day-to-day operations that there is an aspect of "looking at themselves" when they make inspections.

c. Provision of consulting service is another that warrants attention. This should be a Regional Office responsibility with the Forests providing leaders of the "how-to-do-it" variety to assist Districts.

B. STAFF AND LINE

Just as there is a need to sharpen the role of the four levels of the Forest Service organization, there is a need to sharpen the line and staff relationships. Effective line executives need the support

of able staffs, and good staff work requires strong line leadership. The fusion of the two at all levels from the Forest to headquarters was recognized as a major problem by the Forest Service five years ago. Corrective action was taken on paper, but the good intentions have not produced the desired results.

Line authority in the field is weakened by staff people assuming line authority in many subtle ways:

1. Program Allotments. In many Regions and Forests, staff people play the dominant role in allotting money for District operations. Money is identified in headquarters by specialized program categories and retains that identity down through all levels. The program staff man often regards this as "his" money and he decides how and where it will be used. It is recognized that the staff man has a responsibility in this area, but a balance should be maintained whereby the dominant role is played by the line executive.

2. Work Instructions. Giving instructions on day-to-day work is a line responsibility. Possibly there is a fine line between the type of expert advice the staff person is supposed to give and the direction for which the line supervisor is responsible. The staff person can easily cross that line. Again, it is a matter of balance. In many Forests and Regions the balance has been tipped too much toward staff domination of work direction.

3. Inspection and Supervisory Review. Review of work is a

supervisory function. This also must be shared between the line supervisor and staff people, but the participation of the line supervisor should be very noticeable. Some Regional Foresters and Forest Supervisors are doing a very good job in this regard, while others are weak in exercising this responsibility. A more detailed discussion of inspections follows later in this chapter.

4. Decision by Agreement. In some Forests and Regions there is a practice whereby line people going to a staff person at the next higher level can discuss a problem of the nature requiring a line decision by a higher official and if they agree, there is no further discussion with the higher line supervisor. Also by this practice, a staff person can give line direction to the next lower line supervisor and if accepted, it is a decision by agreement. This is a direct substitution of staff direction for line direction.

5. Use of "Acting." The Forest Service has traditionally used a rotational designation of a key assistant to serve as acting District Ranger, Forest Supervisor, Regional Forester, and Chief even at times when the principal (and a Deputy if there is one) is present. At the Region, for example, this requires about two hours each day for the Acting Regional Forester to read and sign mail prepared for the "Acting" designee's signature. This practice has the advantage of helping keep the key staff informed of what is going on in other divisions, but it is the team's

view that there are more effective ways of doing this. This practice tends to lessen line effectiveness by not having a clear determination of the appropriate roles of the line officials and the staff officials, and honoring that difference in day-to-day direction of the organization.

The team observed a need for a review of signing authority at several Regions and Forests. Many items appear to be prepared for the signature of the principal line officer or the "Acting" person which could be signed by the Deputy or by the appropriate division director. It is also felt essential that Regional Foresters having 15 to 19 Forests to supervise and a heavy external relations load should have a Deputy to assure that all essential line work can be handled by line officials rather than passing the work on to staff assistants on a continuing basis.

One reason for the lack of clarity between staff and line in the Forest Service is believed to be the example in headquarters. The principle of staff and line organization was accepted at the time of the management review five years ago for all levels. However, at headquarters a decision was made at that time to establish six Deputy Chiefs with homogenous groupings of functional areas and to assign both staff and line responsibility to each of them. The headquarters influence is unquestionably a strong factor in the continuation of the field practices discussed above. A strong line and staff organization in the Forest Service is dependent upon decisive action in headquarters to establish an Associate Chief position as an overall

number two position to assist the Chief in line direction, recognizing Research, State and Private Forestry, and National Forest Administration as line activities and providing for effective staff support to these line executives. Administrative staff support should be provided centrally by the Deputy Chief for Administration.

C. ORIENTING THE ORGANIZATION FOR MULTIPLE USE MANAGEMENT

From the beginning, it has been the policy to administer the public lands in National Forests under the twin concepts of multiple use and sustained yield. The 86th Congress in 1960 passed legislation authorizing and directing that the National Forests be managed under the principle of multiple use and to produce a sustained yield of products and services.

Population expansion, increasing leisure time, as well as greater pressures from many special interest groups are factors causing the Forest Service growing pains in adjusting programs to public needs. The Forest Service is undergoing a slow transition in realignment of organization that will bring sharper focus to multiple use planning, programing, and management. This is a difficult transition because the organization has been oriented, both program and budget-wise, to strong functional activities. For many years the Service has developed long-range functional plans. Most blending of multiple use decisions has come about by the compromise of functional plans. This has been characterized as a back door approach of multiple use planning. It is in this area that staff people at all levels of the organization

have spent many hours reaching "decisions by agreement."

The multiple use management concept is further splintered by the strong feeling of functional integrity which exists within the Service. This functional orientation is a "built-in" feature of the organization as reflected by the work planning, budgetary, and accounting systems, as well as organization and use of line and staff.

Strong and aggressive action needs to be taken by line officers at headquarters and Regions which will direct greater attention to multiple use planning and management. Functional efforts need to stem from and be a by-product of the multiple use program.

Multiple use must be the "built-in" feature of the organization if a front door approach is to be the result of multiple use programing and implementation. At Regional headquarters the Regional Forester and his Deputy have little organizational help in programing and coordinating multiple use. Regions generally have a multiple use staff specialist located in one of the functional divisions. The Regional Forester needs a small program and planning staff to assist him in programing and coordinating multiple use management. This realignment of Regional Office organization will still leave strong functional divisions and provide the Regional Forester with a mechanism that will strengthen his hand in coordinating multiple use.

The Forest needs to be the key "do level" for multiple use planning. The Supervisor or his Deputy must give the line direction and day-to-day leadership. Functional staff specialists must gear their efforts to the multiple use program. The Supervisor and his staff will find

it increasingly necessary to work with the representatives of forest users and special interest groups during the planning process. These interest groups can be helpful advisors and consultants to the Forest Service in making multiple use decisions. A lesser amount of organizational specialization at the Forest level would facilitate management by the multiple use concept. The present practice is to recognize almost as many specialists as there are professional staff members. If the Forest staff were organized into Administration, Engineering, and two or three program groups there would be more coordination and multiple use practice by the supporting staff. This would also establish a better structure for resource planning.

At the present time the multiple use plan is little more than a guide. Generally there are few, if any, planning decisions other than the designation of "zones for multiple use." The multiple use plan is supplemented with long-range functional plans which may include timber, range, recreation, watershed management, etc. It would seem desirable and feasible to merge these functional plans into multiple use plans. This will give greater emphasis to multiple use and de-emphasize the strong functional orientation that now exists.

D. DELEGATIONS

Although Forest Service officials at all levels earnestly advocate the principle of maximum delegations of authority and responsibility to the ground level, the Service still has a long way to go to make this principle operational. The District Ranger cannot take action on many

routine transactions. In fact, the Ranger can take very little action without prior approval. For example:

1. He cannot make timber sales in excess of $2,000 and 500 thousand board feet although the usual commercial sales run from 2 million to 10 million board feet.

2. He cannot authorize grazing by permits. (Even the allotment management plan in one Region has to go to the Regional Forester for approval.)

3. He cannot approve a recreation site plan even for a dozen picnic tables.

4. He cannot regulate campground use.

5. He cannot approve charges to spectators for ski meets or exhibitions.

6. He cannot approve game stocking or rodent control programs.

7. He cannot make open market purchases in excess of $500 and he cannot dispose of unserviceable personal property.

The appropriateness of the present extent of delegations must be viewed in the total management setting. Policy, procedures, and actions are closely controlled by the handbook and tradition. Major actions are controlled through the approval of plans, projects, and budgets. The reporting system flags problem areas. The inspection program, supervisory visits, and service visits add to the controls exercised at higher levels to assure that the program is being administered with skill and good judgment.

A complete review of delegations was recently completed by a headquarters study group. It is significant that in only seven minor instances were further delegations proposed to District Rangers.

Forty-eight extensions of authority from Regional Offices to Forest Supervisors were recommended, and fourteen extensions from headquarters to Regional Foresters were suggested. This study documents that most approval authorities of any significance are lodged in Regional Offices and to a lesser extent in headquarters.

Undoubtedly, level of competence at the District level is a key consideration in making further delegations. There is considerable variability in this level insofar as personal abilities of staff members are concerned. The GS-11 ceiling which existed until recently on District Rangers has held the supporting staff to grades GS-9 and GS-7. This often results in staff with from only one to three years experience. Larger Districts with GS-12 Rangers (possibly GS-13 in the very large Districts) and GS-11 supporting staff are believed essential to any program of extensive delegations to the District level.

A practice was noted in some Regions of withholding some authorities from new Rangers and Forest Supervisors until they had "proved themselves" by experience on the job. Line supervisors should be selected who are fully qualified to assume immediately all responsibilities of the office. It should be expected that any new line officer will make good use of his staff and will have the intelligence to seek help from his Supervisor when it is needed. On this premise the Forest Service could go much further than heretofore in making blanket delegations in many functional areas with very few stated limitations. Normally, if authorities reserved for higher levels could be stated in terms of complexity of the problem or impact of

the decision, this would be preferred to placing an arbitrary dollar sign on the intelligence or ability of the line officers at the various levels.

Whatever the job is on any District, the Forest Service should set about staffing that District with a Ranger and staff fully capable to manage the resources and make the decisions required in its day-to-day operation with only the very unusual, very complex, or very high "risk potential" decisions going to higher levels for action. The only alternative is to continue increasing the staff at higher levels as the workload increases. This would be an inefficient and costly substitution for greater delegations to the ground level.

E. ORGANIZATION SPECIALIZATION

The internal organization of the work force at headquarters, Regions, Forests, and Districts is characterized by specialization to a very fine degree. Without question the need for specialists in the Forest Service is greater today than ever before and will continue to increase. As a matter of organizational flexibility, balance, and responsiveness, however, there are advantages to using generalists where specialization is not essential.

In Regional Offices organizational specialization is so extreme that there is a supervisory person for every two non-supervisory people. These are not full-time supervisors. They range from branch or division chiefs with nobody to supervise and people supervising only one or two people for five percent of their time to supervisors spending a substantial

part of their time supervising.

The quality of supervision and the cost of supervisory training are adversely affected by this high ratio of supervisors to non-supervisors. A supervisor should plan, improve, train, select, direct, evaluate, and schedule work. He cannot become skilled in these supervisory jobs if he spends only five percent of his time doing them.

This kind of organizational specialization also has an adverse effect on delegations. If work is so fragmented that people at lower levels see only a part of the total, delegations to approve actions or make decisions are forced upward where the larger picture is available.

Organizational specialization results in less interesting jobs for those who are unnecessarily forced to specialize. It reduces the quality of work if not related to other legitimate considerations. It creates the need for ad hoc or regular committees. It creates a heavy need for coordination at higher levels which could have been accomplished nearer the work place.

Related to organizational specialization is the matter of span of control. This is not regarded to be a problem except at the Regional level. Having 10 to 12 divisions to supervise plus 17 to 19 Forests is a pretty heavy load for a Regional Forester. This could be alleviated by combining the Fiscal, Operation, and Personnel Divisions under a Director of Administration. This would bring the Regional Office pattern for management in line with headquarters and Forests.

F. INSPECTION AND CONTROL

The Forest Service inspection system is built around and interwoven with a highly sophisticated system of formalized direction, control and review through both functional staff and line inspection. Formalized inspections are a part of this total system at each management level. Analysis of the inspection program, therefore, must be considered within the total framework of direction, control, and review.

1. Forest Service Manual. This handbook system is an extensive and definitive directive system which is the management bible for most Forest Service activity. It is a centralized directive system supplemented in the field as required to fit local conditions. It contains both policies and procedures for all functions; thus it constitutes an effective management control system.

2. Reviews. The Forest Service is a four level organization. Its operational policies currently provide for a detailed prior review of a significant portion of the work performed by subordinate levels of operation. Although recommendations are made elsewhere in this report to reduce materially the volume of such prior reviewing there would still remain a prior review of major actions as well as a post review of many others.

3. Reporting. The reports system of the Forest Service is an elaborate and time-consuming process. Considerable concern was evidenced by field personnel about this heavy workload imposed upon them and an extensive study is now underway by Forest Service

headquarters to reduce and improve these systems which also constitute an inspection and control device.

4. Project Work Planning. The Forest Service employs a system of detailed annual work planning. All nonrecurring work planned for accomplishment at the ground level is reduced to a project basis, which flows upward for review, approval, concurrence, and funding before it can be performed.

5. Budgetary Controls. Closely allied to the project planning arrangement is the system of budgetary controls. Because no nonrecurring work can happen unless it enjoys an approved project status, it follows that no moneys can be expended for these jobs unless they are associated with approved projects. In this sense, the financial management system must also be considered as a control arrangement.

6. Functional Staff Controls. Staff officers at headquarters, Regional, and Forest levels, charged with specific functional areas of responsibility, exert considerable control over total work on the ground through a wide variety of formal and informal means. Of course, this varies with the individual involved, but the fact that staff officials control functional moneys down through the organization, places them in a position to exert powerful controls over the organizations below them.

7. Inspections. The Forest Service employs two types of formal supervisory or management inspections. One is a General Integrated

Inspection (GII), and the other is a General Functional Inspection (GFI). This arrangement is a formal, traditional management instrument employed by the Forest Service and is found at all levels in the organization. The Chief's Office performs a GII on each Region once each five years. This inquiry dips into the Forests and Districts of the Region under survey. Every four years the staff divisions at the headquarters level perform a GFI of each Region, looking at their particular operational area at the Region, Forest, and District levels. Each Regional Office on the average of once every four years also performs a GII on each Forest within the Region, which again dips into selected Ranger Districts of the Forest. Regional staff officers every two to six years perform a GFI, slanted to their own functional areas, on each Forest in the Region. The Forest Supervisor performs a GII on each Ranger District of his Forest every three years. Similar inspection devices are imposed on the research activity of the Service.

Considering the formal inspection program in the context of the total management system, cyclical functional reviews are overdone and visits by key line executives at Region and Forest levels are too infrequent. Very often the GII reviews are conducted entirely by staff officials with little participation by the responsible line official. Intervals in excess of three years for any type of inspection are too great for a program as dynamic as that of the Forest Service.

RECOMMENDATION 1. Issue new guidelines on the role of each of the four levels of the organization for National Forest Administration and assign to the Regional Foresters the responsibility for implementation throughout the field.

Agency Action: Concur.

Progress: Action has been completed.

RECOMMENDATION 2. Strengthen line and staff organization in the Forest Service by:

a. Establishing a single Associate Chief position to assist the Chief in the line direction of the Service.

Agency Action: Associate Chief position will be established as soon as personnel actions can be cleared.

b. Reorganizing headquarters on a line and staff basis by establishing a new position of Deputy Chief for National Forests Administration with line authority over all NFA activities, retaining line authority in the positions of Deputy Chief for Research and Deputy Chief for State and Private Forestry. Establish strong staff support to the Chief as further illustrated in the proposed organization chart (see Exhibit A).

Agency Action: The National Forest program activities will be placed under one Deputy Chief. No changes needed in the manner in which Deputy Chiefs for Research, State and Private Forestry, Administration, and Program Planning and Legislation are presently operating.

Progress: Organization changes and related personnel actions were effective March 21, 1966.

c. Changing management practices and procedures in the field to conform to the line and staff concept.

Agency Action: Concur.

Progress: Action to reiterate and emphasize this concept is a part of current directives, management training, master organization planning, and position management. Implementation action is essentially complete.

d. Discontinue the use of "Acting" as a regular rotational assignment of key staff to act for the principal line executive when they are present.

Agency Action: Concur.

e. Eliminate the use of the "Acting" designation by staff officials on a continuing basis in their functional areas. Direct staff officers to sign routine non-directive material with their functional titles.

Agency Action: Concur, on a qualified basis. For control purposes staff-level correspondence originating in Divisions should be signed by the Division Director or his primary assistant.

Progress: Directives have been completed and are being reviewed for issuance. Action is essentially complete.

RECOMMENDATION 3. Establish in each Regional Office a small program and planning staff reporting to the Regional Forester to assist him in programming and coordinating multiple use management.

Agency Action: Concur. The multiple use coordinator will be assigned to the Regional Forester-Deputy level.

Progress: Action has been completed.

RECOMMENDATION 4. Establish the Forest Supervisor's Office as the key "do" level for multiple use planning. Organize the key staff specialists at the Forest level into multi-functional groups.

Agency Action: Concur

Progress: This concept is being reflected in current management emphasis including directives. The organization of key staff specialists at the Forest level is being reflected in master organization plans now being completed.

RECOMMENDATION 5. Delegate decision-making authority to the lowest level where the knowledge and capability to make decisions exists. Establish capability at the District level to accept final responsibility for all but the most unusual or complex work and increase delegations to all District Rangers accordingly.

Agency Action: Concur. Delegations will be increased by establishing two or three classes of units based on volume of business to which uniform delegations can be made for each class.

RECOMMENDATION 6. Improve delegation practices by (a) reducing delegations "by name" to the absolute minimum and discontinuing the practice of withholding delegations until a person "has proven himself," and (b) using blanket delegations with stated exceptions rather than spelling out in detail the responsibilities and delegated authority at each level.

Agency Action: Concur. The present delegation practices are being reviewed.

Progress: Review of delegations planned for last half of calendar year 1966.

RECOMMENDATION 7. Establish an organization policy which discourages excessive organization specialization and adjust current organizations in keeping with the new policy.

Agency Action: Concur.

Progress: This policy is reflected in current directives and is being implemented as part of position management and master organization planning.

RECOMMENDATION 8. Strengthen line effectiveness and generally simplify the inspection system as follows:

a. Headquarters

(1) Provide a supervisory visit by the Chief or Associate Chief at each Region at least annually.

(2) Conduct a General Integrated Inspection (GII) of each Region by a team of top officials at 3-year intervals.

(3) Provide service visits when requested by the Region.

(4) Initiate functional visits only on a "need for" basis, to install new programs, spot check effectiveness of critical matters, and gather information as background for policy or program changes.

(5) Discontinue cyclical functional inspections.

b. Region

(1) Provide a supervisory visit by Regional Forester to each Forest at least annually.

(2) Discontinue Regional GII's.

(3) Conduct team functional reviews on each Forest at 3-year intervals--preferably one team for all resource management, engineering, and fire protection, and a second team for administrative areas.

(4) Provide service visits when requested by the Forest.

(5) Initiate functional visits on a "need for" basis only, to install new programs, spot check effectiveness of critical matters, and gather information as background for policy or program changes.

c. Forest

(1) Provide a supervisory visit by the Forest Supervisor to each District at least annually.

(2) Discontinue Forest GII's.

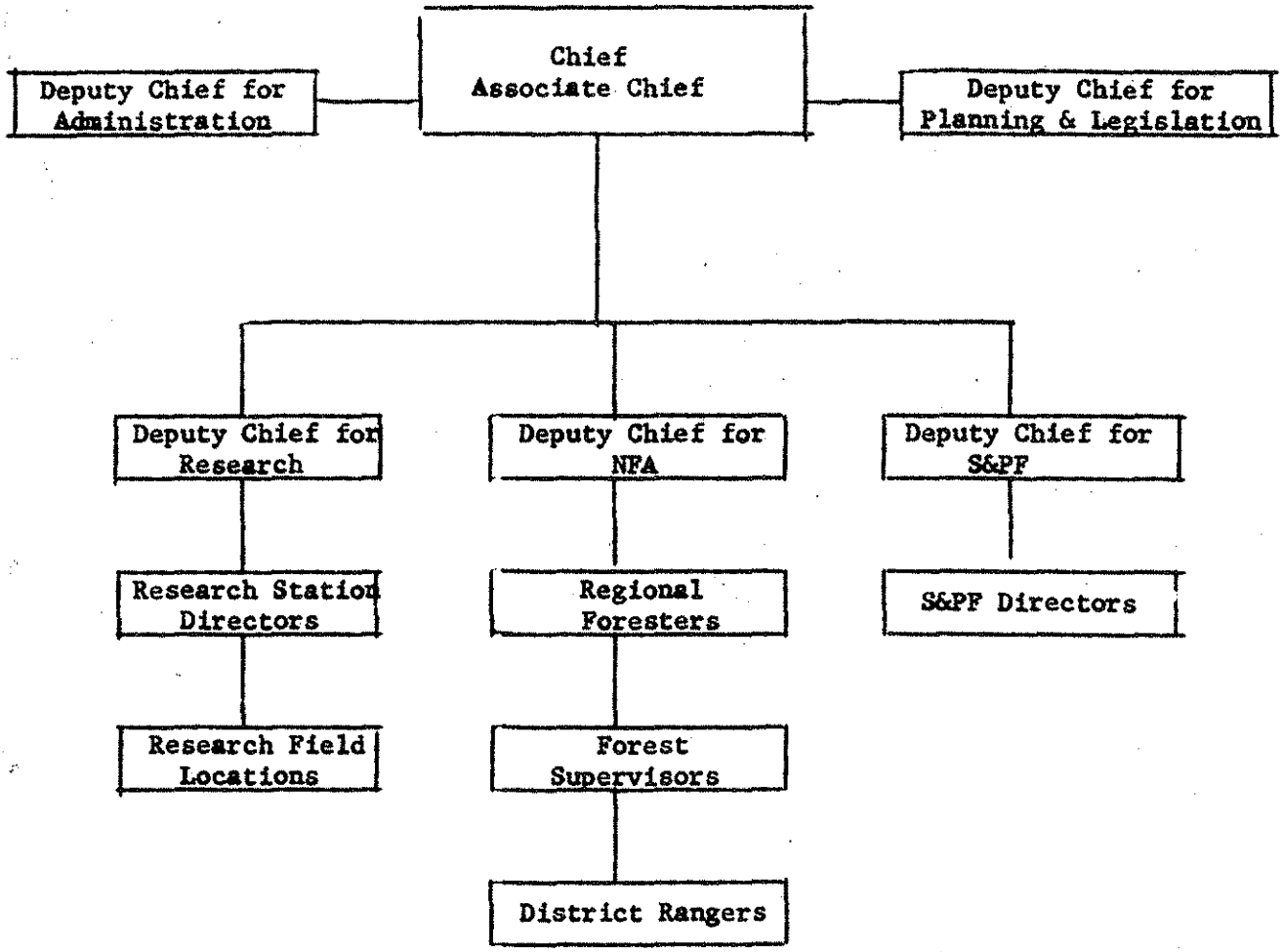
(3) Initiate functional visits only on a "need for" basis to assure that new programs or methods are properly understood, spot check effectiveness of critical matters, and keep familiar with field operations.

Agency Action: Concur, on a test basis. Will install a trial of the proposed system in one Region next year. This will include an inspection from the Washington Office of the test Region and Regional inspections of the National Forests in the Region. The District inspections by the Forests will be termed "Multiple Use Inspections." The trial will be evaluated.

Progress: A trial system has been designed. Testing will be under way in Region 1 beginning July 1, 1966.

EXHIBIT A

PROPOSED ORGANIZATION



III

ADMINISTERING THE NATIONAL FORESTS

- DISTRICTS
- FORESTS
- REGIONAL OFFICES

III

ADMINISTERING THE NATIONAL FORESTS

The Forest Service is a dynamic organization. Although the concept of multiple use extends back many years, it has had its greatest impact during the past five years. Public demand for services and use of forest lands is skyrocketing. The public is evidencing an ever increasing interest in the management of Forest Service resources and is making its thoughts known individually and through special interest groups and organizations. Techniques for doing the work are changing rapidly. Machines are replacing manpower. ADP is replacing the ledger and manual computations. Aircraft have changed and greatly improved fire fighting, insect control and seeding operations. These changes have created a demand for more skills, greater variety of knowledges, greater specialization and have made necessary more effective coordination of individuals and organizations to meet the program and technological changes. In addition, transportation has improved constantly, thus expanding the area that can be served by a District staff.

Field structure in the Forest Service is basic to program effectiveness and economy. National Forests are administered by a network of 10 Regional Offices, 130 Forest Supervisor's Offices, and 822 District Ranger Offices. It is important that Forests, Districts and Regions be of appropriate size to establish optimum managerial units consistent with their purpose. If Districts are too small, it is uneconomical to

staff them with a balanced staff representing needed specialized skills. If they are too large, travel time from the District headquarters to work areas in the Forests consumes too much of the available manpower resources. If Forests are too small they are not appropriate planning areas and cannot afford the desired level of competence as "back-up" for District operations. If they are too large, the Forest Supervisor cannot give the quality of line supervision needed for effective leadership. Too many regions result in excessive cost for program implementation and the maintenance of highly specialized staffs with workload too small or too fluctuating to make good utilization possible. Too few Regional Offices would result in an excessive span of control for effective leadership in the implementation of national programs and the evaluation of program effectiveness in the Forests. It is in the context of these considerations that the review team gave considerable study to the appropriateness of the present structure of Districts, Forests and Regional Offices.

A bold re-appraisal of optimum field structure is one of the greatest management needs in the Forest Service today. The program is near midway in an expected long period of growth. Already the present structure is showing signs of strain. Inadequate skills are available on many Districts. This is being patched up by providing such skills at the Forest and Regional levels. Forest Supervisors are finding their assigned areas too small for many aspects of planning; so more and more of that job is being passed on to the Region. The current and greatly overdue expansion of ADP applications to program and administrative

operations is demonstrating that the capability of modern technology is considerably ahead of organizational arrangements for its best use.

A period of growth and change is an ideal time to adjust field structure. The increasing demand for key people makes personnel adjustments easier. Users of Forest resources benefit from a structure equipped to make decisions and give full service at the local level. This requires more people, more specialization, higher capability, and professional management at the District level. This will extend upward the grade level for District Rangers and key staff, Forest Supervisors and Regional Foresters. It will expand the area that can be managed efficiently by a District, a Forest and a Regional Office. Each of these organizational levels will be discussed separately.

A. DISTRICTS

Size of Districts

Since 1954 77 new Districts have been created. 25 of these resulted from a transfer to the Forest Service of the National Grasslands and Land Utilization areas. Along with the creation of the remaining 52 Districts, 20 were eliminated by combining them with other Districts thus making a net increase of 32 other than by land acquisition. This indicates a ten year trend toward smaller Districts in terms of geographic area. Today's conditions would seem to warrant much larger Districts.

Districts vary greatly in geographic area. Districts also have a great variation in the volume, complexity and diversification of workload. These factors are all considered in determining "size of Districts." The following data portray the percent variation in size of the present 822 Districts using various workload factors. Most of these data stem from reports for the fiscal year ending June 30, 1964.

Net Acreage of Ranger Districts

Less than 100,000 acres	-	17.0%
100,000 to 200,000 acres	-	40.5%
200,000 to 300,000 acres	-	25.3%
300,000 to 400,000 acres	-	10.2%
400,000 to 500,000 acres	-	3.0%
Over 500,000 acres	-	4.0%

Annual Budget of Districts
Less Forest Roads & Trails

Less than $100,000	-	60.8%
$100,000 to $200,000	-	31.3%
$200,000 to $300,000	-	6.3%
Over $300,000	-	1.6%

District Workload in Base Hours

1,000 to 2,000 hrs.	-	5.0%
2,000 to 3,000 hrs.	-	34.5%
3,000 to 4,000 hrs.	-	39.1%
4,000 to 5,000 hrs.	-	16.1%
Over 5,000 hrs.	-	4.9%

Size of Ranger District Staff
Full time - June 30, 1964

Less than 10	-	37.3%
10 - 20	-	23.5%
20 - 30	-	16.0%
30 - 40	-	9.3%
40 - 50	-	7.2%
Over 50	-	6.5%

Allowable Cut, Range Allotments and Permittees

	Allowable Cut Millions B.F.	Allotments Numbers	Permittees Numbers
Less than 10	49.3%	64.1%	43.5%
10 to 20	22.4%	26.8%	18.5%
20 to 30	12.3%	6.8%	12.7%
30 to 40	7.8%	1.2%	7.4%
40 to 50	3.0%	0.3%	6.5%
Over 50	4.9%	0.6%	11.2%

An analysis indicates that many individual Districts are small in size from both volume and complexity of work. For example, nearly half of the Districts have an annual allowable cut of less than 10 million board feet. Table I shows the highest number and percentage of Districts that are included in each workload factor listed. By contrast Table II indicates the volume workload of larger Ranger Districts.

Table I
(Based on highest percentage factors)

	Number of Districts	Percent
Net Acreage - 100,000 to 200,000 acres	333	40.5%
Annual Budget - less than $100,000	500	60.8%
Workload in Base Hours - 3,000 to 4,000	321	39.1%
Size of District Staff - Less than 10	307	37.3%
Allowable Cut - Less than 10 million B.F.	405	49.3%
Number Range Allotments - less than 10	527	64.1%
Number Permittees - less than 10	358	43.5%

Table II
(Based on lowest percentage factors)

	Number of Districts	Percent
Net Acreage - 400,000 to 1,000,000 acres	57	6.9%
Annual Budget - $200,000 to $500,000	65	7.9%
Workload in Base Hours - 5,000 to 10,000	40	4.9%
Size of District Staff - 50 to 100	53	6.5%
Allowable Cut - Over 60 million B.F.	28	3.4%
Number of Range Allotments - Over 20	75	9.1%
Number Permittees - Over 50	92	11.2%

Criteria for Determining District Size

District size at present is primarily determined by the non-delegable Ranger workload of the District. Criteria on one hand provide that Districts with a workload of less than 1500 hours of

non-delegable managerial workload* may be combined. On the other hand criteria provide that Districts should ordinarily have no more than 1500 hours of non-delegable workload. The non-delegable workload concept is in itself applicable only to the custodial type of District with the Ranger as a working Supervisor who must keep his hand in the doing functions. This concept places technical competence above managerial ability. Its use as controlling criterion, therefore, predetermines that the Districts will be predominantly small.

Present criteria leave little flexibility for increasing the size of Districts and for staffing them with competent specialists in the various functional disciplines. Consequently, 521 Districts are now staffed with less than five professional employees. There are 56 Districts with one, 159 Districts with two, and 164 Districts with three professional employees. This results in a reluctance to delegate fuller responsibility to the District Ranger. These small Districts with small professional staffs result in more of the "doing" work being performed at the Regional and Forest levels. An analysis by the survey team supported by a Forest Service analysis reveals that about forty percent of the personnel at the Region and Forest headquarters are now performing "doing" work.

Another major factor resulting in small Districts revolves around the location of Ranger headquarters. One criterion indicates Ranger Stations should be appropriately situated with regard to transportation and communications so the Ranger and his staff can handle the work

*work as defined by the Forest Service which the District Ranger and Forest Supervisor should do personally.

effectively and economically. Another criterion indicates the Ranger and his staff should be located where they can take part in community affairs and establish good working relations with forest users and the local public. The survey team finds that the latter criterion is often the primary consideration in locating the headquarters. This may result in a 20-40 mile drive before reaching the boundaries of the District. The emphasis given this factor has resulted in the splitting of Districts into smaller units and is often cited as the primary reason for not enlarging the geographic area of existing Districts.

In Ranger District operations where the size of the Districts reflected the larger workloads, the programs were more dynamic and were more nearly designed to meet present day needs. Generally the Rangers in these larger Districts indicated a willingness and the managerial ability to handle even more workload and more responsibility. By contrast, Rangers of the small Districts seemed content with the status quo type of custodial operation. These small workload Districts do not provide the environment in which District Rangers and their staffs "grow in the job." In fact, there was considerable evidence that the opposite was taking place.

Need for a New Concept in District Size

In the design of Districts with larger managerial workloads and a competent staff, the Forest Service seems to be torn between its recollections of the past when it was little more than a custodial organization and its present role of becoming a giant in land and

water management. Many Forest Service employees at the Washington, Regional, and Forest levels seem to experience difficulty in recognizing that the Ranger can and should acquire competence through adequate staffing to manage his District. As a consequence, the Ranger is generally looked upon as a kind of "chief cook and bottle washer," while all the real management and operational decisions are made by staff at higher levels, who by virtue of their tenure and specialized assignment tend to "run" the programs on the ground.

A basic flaw in the organization grows out of this heavy staff dominance. An alarming number of Rangers appear to be disinclined to accept real management responsibilities. Much of this is due to the reluctance of Region and Forest level staffs to relinquish their rather tight hold on the management decision-making process. A significant proportion of staff time is devoted to a detailed review and approval of actions on the Ranger Districts.

The Forest Service must take a major step forward by making the Ranger District dynamic as an operating unit. To accomplish this a basic concept needs to be established clearly and firmly that a District must be large enough to justify staff competence to permit the Ranger to have a nearly complete delegation of authority and responsibility for the management of his District. While the Ranger needs a general first hand familiarity with the District, he must rely on his principal staff for a detailed knowledge of the technical disciplines required for the operation of his District. If workload in a particular function

does not justify a needed staff specialist then the staff specialist from the next higher level should be working under the Ranger's direction when he is assigned staff functions in the District.

It is quite apparent the Forest Service will move in the right direction if positive action is taken to revise and implement policy for establishing larger workload Districts. As a result of larger workload Districts it will be possible to employ larger and more competent Ranger staffs. GS-11 staff specialists at the Ranger District level will have an opportunity to advance directly to staff positions in the Forest Supervisor's office. Likewise it will be possible to have higher calibre District Rangers. Any increase in personnel costs should be offset by decreased requirements at the Forest and Regional levels, and increased productivity and effectiveness at the District level because of abler personnel.

If District workload is to be increased significantly a real effort must be made to increase the geographic area of Ranger Districts. An evaluation of projected workload in terms of the "Ten Year Program for National Forests" indicates most Districts will not support a reasonable expectancy workload that justifies both a managerial Ranger Supervisor and a multi-discipline professional staff. A number of Districts will have a significant increase in one or two primary functions such as timber or recreation. However, many Districts will require a substantial increase in acres before some of the secondary functions such as Watershed Management and Wildlife become great enough in workload volume to support an adequate staff.

Fifty-eight percent of the present 822 Districts are less than 200,000 acres in Government ownership. This represents an area that is less than eighteen square miles. Many more Districts should encompass a reasonable expectancy range of 300,000 to 600,000 acres.

Maximum Area

A maximum geographic area must be a first consideration in determining the upper limits of District size. The geographic area should be evaluated in terms of gross and net acres, topography, road systems, location of forest users and alternatives for location of District Ranger headquarters.

Travel distance to important work areas must be a major factor in determining a maximum size area. Where the workload is extensive in nature and only infrequent trips are required, travel distance becomes more minor as a consideration. Travel distance will vary depending on the types of roads over which District employees must travel. The better road systems will make it possible to cover greater distances. Travel distances should never be so great that it becomes necessary to establish sub-unit headquarters to which employees are assigned on a permanent basis. All factors associated with the determination of maximum size in terms of acres must be carefully evaluated. The location of Ranger headquarters to manage efficiently the natural resources of the District must be a prime consideration in determining the upper limits of the area.

Minimum Staff

A minimum size District must have a competent and well balanced staff that is capable of performing the major activities on the District. It must have a District Ranger and staff that can take responsibility for the short-range planning and the execution of land management decisions reflected in the long-range multiple use plan.

A large workload in one major functional activity such as timber, range or recreation is an important factor but must not be the primary consideration in determining minimum staff. Of greater importance in such a determination are the number and potential scope of secondary functional activities such as watershed management, wildlife, range, timber or recreation which reflect far more significantly the complexity and range of management decisions and responsibilities. To meet these varied responsibilities it is essential that a well balanced staff have training, experience, and competency in the needed professional activities. Volume and variety both must be considered in evaluating a managerial Ranger workload that will use a competent staff efficiently.

Optimum District

Acres should determine the ceiling for maximum size and staff should determine the floor for minimum size. Many times, maximum size in acres and minimum size in staff will coincide for an optimum sized District. Both factors must be considered in relation to one another in arriving at an optimum size District. District size that is greater than the maximum or smaller than the minimum should only be permitted in rare cases; for example, severe public relations problems with the Forest users, or living conditions too adverse for the Ranger and his staff may occasionally justify a District smaller than the minimum.

An optimum size District will have enough acres to support a competent professional staff working under the direction of a managerial Ranger supervisor. This size District will also support a workload that will justify sub-professional and clerical assistance at the Ranger level.

The survey team has evaluated many other workload factors in the study of District size. Both present workload and projected workload as reflected by the "Ten Year Program for National Forests" have been considered. Using acres as a ceiling and staff as a floor for District size, and considering all the pertinent factors previously discussed in an analysis of each existing District, we have concluded that it is reasonable to expect the majority of the Districts to fall within the following range:

Budget (Excludes Forest Roads & Trails)	$150,000 to $400,000
Base Hours Workload	4,000 to 10,000
Employees	10 to 90
Gross Acres	300,000 to 600,000
Grazing Acres	100,000 to 400,000

Allotments	10	to	40
Permittees	20	to	100
Allowable Cut M/Bd. Ft.	20	to	100
Family Units	100	to	400
Recreation Units	100,000	to	500,000

Diligently applied, the criteria for minimum and maximum size discussed above should produce a reduction in the number of Districts by about twenty-five to thirty-five percent.

RECOMMENDATION 9. Change the concept of the Ranger position from working supervisor to manager.

Agency Action: Concur to the extent that the ranger is a manager but he will continue to participate with his top staff in carrying out the managerial work on his District.

RECOMMENDATION 10. Change the policy pertaining to District size so optimum size Districts will result by using acres to focus on maximum size, and staff to focus on minimum size.

RECOMMENDATION 11. Diligently apply these criteria to enlarge Districts so a managerial Ranger workload will be realized which will support a competent staff that has the responsibility and authority to execute land management plans that are within the framework of the Multiple Use Plan.

Agency Action: These two major factors will be considered in the policy revision to be based on results of the study, assigned to Operations Research group, now under way. Approximately 150 Districts will be reviewed within the next year. Remainder will be reviewed on a scheduled basis.

Progress: A comprehensive size of District study is under way and on schedule. The study is expected to provide a sound basis for management decisions.

B. FORESTS

Present Size of Forests

The Forest Service has 130 Forest Supervisor offices supervising 154 National Forests. About seventeen percent, or 5,815 man-years of Forest Service employment, operated from these headquarters in fiscal year 1965. The Chief, on October 17, 1960, approved a policy which established the Supervisor's office as the basic planning unit. This policy implies that the Supervisor's office should be staffed with specialists who can make the multiple use and long-range plans that are needed in developing and managing the National Forests. This office also provides supervisory, administrative, training and specialist assistance to Ranger Districts. Supervisor positions are either GS-13 or 14. Some GS-14 Supervisors have a GS-13 deputy. Most principal staff specialists are GS-12.

During the past ten years, the number of Forest Supervisors' offices has decreased by seven. Three new Forests were established during this period and five were eliminated. The balance resulted from several combinations and separations.

There is a tremendous range in the size of National Forest programs directed by the 130 Forest Supervisors' offices. The acres administered range from a low of 211,200 to a high of 3,118,900 with an average of 1,434,800--the largest is 15 times as large as the smallest.

Total employment in the Ranger Districts of the Forests vary from a low of 18 to a high of 528. Several Forests have more

permanent career employees assigned to the Forest Supervisor's office than are assigned to all the Ranger Districts in the Forest.

There is also a wide variation in the number of Ranger Districts supervised by these Forest Supervisors' offices. The span of control ranges from three to thirteen Districts; the average for all Forests being six Ranger Districts.

The "Size of Unit Policy for National Forests" lists the amount of the Forest budget as an important factor. This policy states that a budget less than $1 million is an indication the Forest is too small. Budgets over $2 million indicate the Forest should be reduced in size according to this policy. Half of the present Forests have budgets that are less than $1 million and seven percent exceed $2 million. Actually Forest budgets, excluding Fighting Forest Fires and Forest Roads and Trails, range from a low of $240,000 to a high of $4 million with an average of $1,396,837--a spread of sixteen times.

Non-delegable workload that the Supervisor or his deputy must do personally is given the greatest weight in the size policy statement. The number of Ranger Districts and the amount of Supervisor-staff-level workload is combined to determine the amount of non-delegable Supervisor workload.

The present criteria used in determing size of Forests are not very realistic. Proper recognition is not given to the primary functions of the Supervisor's office. The policy guide gives no recognition to the Forest as the "basic planning unit." It does not

recognize adequate size as a factor in performing functions that can be done more efficiently at this level.

Observations and interviews made at the Forest and District levels reveal that the Forest Supervisor's office is not performing its proper role as the basic planning unit. The Supervisor generally has not organized his staff into an effective multiple use planning team that is taking responsibility for development of the long-range plans. Neither is the Supervisor or his deputy providing the day-to-day leadership for multiple use planning. Many times the multiple use plans are being developed in the Districts for review at the Forest level. The District Ranger and his staff should assist with inventory, analysis and evaluation of data used; however, the Supervisor and his staff should be the people who are expert in and responsible for actually developing the long-range plans.

Observations and interviews also confirm that the Supervisor's staff is actually controlling many of the operation and management activities at the District level. This is done through prior reviews at the Forest and on-site review at the District. The result is strong emphasis on functional activities from both the standpoint of program and budget. This causes the staff to devote a high percent of their time to many "do" activities that should be performed at the District level.

Optimum Size Forest

The Forest Supervisor offices should be organized to perform the following major missions in support of the National Forest Administration Program:

a. Serve as the basic planning unit to develop the Multiple Use and long-range plans of the National Forests.

b. Provide line supervision to the District Rangers through the Forest Supervisor and his Deputy.

c. Provide staff competence to train staff people at the District level in the professional disciplines required to develop and execute the short-range operational plans.

d. Provide administrative and program support services that cannot be performed efficiently at the District level.

The proposed structure for Forest Supervisor offices is advocated in the context that Ranger Districts are increased in size and managerial workload to support a competent staff which can be given responsibility and authority for executing land management plans. Within this framework the following factors seem most important in size of Forests:

1. Span of Control. Both supervision and staff training are considerations in determining the number of Ranger Districts per Forest. Experience indicates eight Districts represent a desirable pattern for span of control; the present average span is six. Other factors important to size may cause an efficient range to vary from six to ten.

2. Geographic Proximity. The location of Supervisors' offices is an important factor in determining size of Forest. The topography, road network, location of Forest users and Forest industries, and the alternative locations for headquarters all are important in determining the combination of Districts that can best be serviced effectively and economically.

Span of control and location of Supervisor headquarters are the most important factors for determining size of Forests. Supervising eight optimum size Districts will normally result in a workload that can make the Supervisor and his staff a competent planning, supervision, training and servicing unit. Application of these guidelines, using the twenty-five percent to thirty-five percent reduction in Districts as a base, should permit a reduction in the number of Forest Supervisors' offices that could ultimately approach thirty-five percent to forty-five percent.

RECOMMENDATION 12. Develop "size of Forest" policy that will make span of control of optimum size Districts and geographic proximity the major factors.

Agency Action: Concur. There are other factors that may be dominant in some instances. The policy will be revised in conjunction with Recommendation 10.

RECOMMENDATION 13. Reduce the number of Forests by using eight optimum size Districts as the standard measure for determining size.

Agency Action: Concur with the ideal "span of control" concept. Districts, Job Corps Centers, Nurseries, etc., are equivalent units. This concurrence recognizes there will be cases where this ideal cannot be attained. National Forest administrative units will be reviewed over the next two years in accordance with the revised policy.

Progress: Following completion of the "Size-of-District" study, the indicated implementation action will be taken.

C. REGIONAL OFFICES

Following the transfer of public domain "Forest reserves" from the Department of the Interior to the Department of Agriculture in 1905, provision was made for six District offices in the western states occupied by such lands. An Eastern District was established in Washington in 1914 when other lands were acquired in the eastern states. An Alaskan District was formed in 1921. The North Central District was established in Milwaukee in 1929. In 1930 the Secretary of Agriculture designated the District offices as Regional offices. In 1934 the Eastern Region was divided to place a Regional office in Atlanta, and in 1941 the Eastern Region was transferred from Washington to Philadelphia. This chronology reflects the origin of the existing ten Regional offices.

Size of Regional Offices

The question is pertinent whether historic Regional structure is valid at the present time in view of advances made through the years in transportation, communications, managerial methods, and administrative procedures. Variations between Regions are extreme in most of the criteria available for reference (excluding the exceptional situation in Alaska). Such data appear on Table I.

a. Employment (June 30, 1964) ranges from a low of 1421 in Region 7 to a high of 7414 in Region 6.

b. Field Allotments (F.Y. 1965 for Forest Protection and Utilization-excluding Research) show a range from $11,507,000 in Region 7 to $24,873,000 in Region 5.

c. Net Acreage of 4,252,722 in Region 7 contrasts with 30,800,215 in Region 4.

d. Span of Control extends to 19 National Forest Supervisors in Region 6, while only 7 Supervisors report to Region 7. Within the Regions the number of Ranger Districts varies from 39 in Region 7 to 120 in Region 4.

Optimum Size Regions

The role of Regional Offices as defined in Chapter II is such that a larger size has a definite advantage. Program implementation over a wider area provides more experiences and a greater variety of problems as a framework for quality implementation; the larger area provides more programs for comparison from the evaluation standpoint; larger areas support specialized consultants with greater ease; larger areas mean less duplication in the preparation of directive supplements; and larger areas provide a more economical service area for providing centralized administrative support.

The optimum size of Regions should be determined almost entirely by span of control. Travel distance is not considered to be critical because there is no appreciable difference in travel time regardless of the number of regions, because of the speed of modern transportation. Proximity to problem areas is not considered of prime importance because of the two levels below the Region which should handle nearly all problems, and because of travel convenience as already stated. Volume of work is not considered of prime importance because the "doing" level is two levels below the Region.

A span of control of 15 to 19 forests has been demonstrated as feasible by five of the ten Regions. The review team accepts this as

a reasonable expectancy for all Regions. This would indicate room for some tightening up of Regional structure with the existing number of Forests. Assuming a significant reduction in the number of Districts and Forests as discussed above, realignment of Regional areas should be made to retain a span of control of approximately 18 Forest Supervisors' offices per Region.

RECOMMENDATION 14. Develop "size of Region" policy that will make span of control of optimum size Forests the major factor.

Agency Action: Concur. A "size of Region" policy with span of control as a major factor will be developed in connection with Recommendations 10, 11 and 12.

RECOMMENDATION 15. Reduce the number of Regional Offices by using eighteen optimum size Forests as the ideal measure for determining size.

Agency Action: Concur with ideal "span of control" concept of 15 to 18 National Forests or equivalent units.

Progress: The Region 7 Regional Office at Upper Darby, Pennsylvania was phased out effective March 1, 1966.

Realignment of staffing in Region 10 (Juneau, Alaska) is awaiting Departmental approval.

TABLE I

Comparative Data on Present Regional Offices

Region	No. of Forest Offices	Employment	Field Allotments (000)	Net Acreage	Allowable Cut (MMBF)	No. of Grazing Permittees
1	16	5429	$17,017	25,979,752	2087	2234
2	15	2817	12,127	21,842,467	680	3374
3	13	2436	11,900	20,563,797	597	2674
4	18	4012	14,542	30,800,215	618	4782
5	17	6401	24,873	19,301,689	1988	1059
6	19	7414	22,691	22,988,576	4330	740
7	7	1421	11,507	4,252,722	421	63
8	11	3375	20,279	9,800,454	820	389
9	11	1802	12,959	8,587,622	803	79
10	3	386	3,103	20,926,258	864	2

IV

COOPERATING WITH STATE AND PRIVATE FORESTRY

- PROGRAM OBJECTIVES
- ORGANIZATIONAL DEFICIENCIES
- S&PF RELATIONSHIP WITH FORESTRY RESEARCH
- REGIONAL FORESTERS' ROLE IN S&PF
- PROPOSED FIELD STRUCTURE

IV

COOPERATING WITH STATE AND PRIVATE FORESTRY

The State and Private Forestry (S&PF) program is described in various writings and statements as one of the three major jobs of the Forest Service, or "one leg of the three-legged stool". In fact, it is the smallest and weakest program in terms of Forest Service attention and resources. National Forest Administration (NFA) constitutes the largest and strongest leg with Research as the second major area of attention.

Although the S&PF program has produced significant progress over the years, there are weaknesses that prevent it from making an optimum contribution. With the new approaches contemplated in the draft Program of the USDA for Forest Lands in State, Local and Private Ownerships now being reviewed internally, it is appropriate at this time to make those changes necessary to assure the most effective program with the resources available.

Symptoms of the weaknesses in the S&PF area are well known in the Forest Service. They have been cited repeatedly in the General Integrating Inspection reports and in correspondence. The main characteristics, occurring in varying degrees in many of the Regions, are lack of vigor and vitality in the field, lack of imagination in providing leadership, and slow, if any, progress at the State Forester level, in some states, in expanding their programs

or coverage. These weaknesses stem from the need for, and lack of, active time and attention on the part of the NFA personnel, both the Regional Foresters and Regional Office personnel not assigned to the S&PF organizations. As stated in one of the GII reports, "The Regional Forester is at a loss to know what to do or specifically what is expected of him". The report then goes on to suggest that the thinking of all the Regional Office specialists be brought to bear on these problems to provide a solution. The solutions offered in the past appear to consist of stimulating the interest and attention of the NFA personnel in the S&PF area, and of providing more funds and more resources to the individual states as inducements to intensify and broaden their programs.

A. PROGRAM OBJECTIVES

This survey team takes exception to the findings set forth in the January 15, 1960, report of McKinsey & Company, Inc., Gearing the Organization to the Job Ahead, that "The objectives and scope of the State and Private Forestry and assignment of responsibility for achievement of the program's objective are not precisely stated, well understood, or consistently interpreted". On the contrary, it was found that the objectives were clearly defined, well understood and consistently interpreted. Rather, the problems were found to be introduced and perpetuated by efforts to integrate the S&PF Program functions with those of National Forest Management in the field.

B. ORGANIZATIONAL DEFICIENCIES

The S&PF Program is operated mainly at the Regional Office level where the organizational difficulties in the program appear. Except for the formal cooperative cost-sharing programs, S&PF functions are distributed throughout the staff, intermingled with other State and Private Forestry relationships, and diluted by the assignment of non-S&PF functions to the S&PF organizations. Only one region was found to have an S&PF organization paralleling that of the Washington Office. Major deviations were the assignment of Pest Control, Flood Control and River Basin Programs to other officials and the assignment of National Forest Fire Control functions to S&PF. Section 3052.2 FSM specifically encourages this type of integration and fragmentation. Even further, in a very broad manner which the field offices interpret in many ways, it directs that the Regional Forester "develop and administer a coordinated program in each state within his Region which combines the efforts of his entire organization". The current approach has two major disadvantages:

1. <u>It does not recognize the competitive atmosphere that exists between administrators of National Forests and managers of State and Private Forests</u>.

The team found a unanimous feeling, on the part of State Foresters and timber industry representatives contacted, that the Supervisors of the National Forests were their competitors, and

professional equals, but not their leaders, advisors or protectors. A feeling of mutual respect exists and horizontal working relationships to assure cooperative effort on mutual interests or common problems were found to be excellent. The feeling was universal, however, that the primary interest of the Regional Forester and his staff, as well as the Forest Supervisor and District Ranger, lies in the management of the National Forests. The survey team found this feeling to be a valid one, in spite of the many written and oral statements that the "biggest job of the Forest Service in achieving national timber goals is in State and Private Forestry". NFA is a tangible job, it is naturally the most heavily staffed and funded, and it is the job for which foresters are trained. It is unrealistic to expect that they could do other than give it their primary attention. S&PF, on the other hand, viewed as a program responsibility of the Forest Service, is quite different from the NFA program responsibility. True, the work on the ground of a custodial and land management function on S&PF lands is almost identical to that on National Forest lands. However, the Forest Service performs the job on the National Forest lands while others are performing on state and private lands.

What then is the proper role of the Forest Service in addressing itself to the S&PF responsibility? It is one of administering grants-in-aid; one of demonstrating leadership in the professional forestry associations; one of stimulating, activating and motivating good

forest land management practices on non-Federal lands; one of getting results through the efforts of others over whom they exercise no organizational control. It is basically a selling job, a promotional venture, assisted by the availability of Federal grant-in-aid funds. It draws upon the results of forestry research (as does NFA); its setting is in the professional forestry fraternity (as in NFA), but beyond that point, it is a separate, and different program from NFA.

2. It confuses S&PF and NFA relationships with state and private officials directly concerned with each of the two programs.

Management of the National Forests requires constant communications and negotiation with state and local officials, private landowners and industry representatives. Coordination of fire protection over non-Federal property in the Forests, law enforcement, property zoning, fish and game laws, watershed protection, public relations, training and recreation are only a few of the many contacts required. In such cases, the National Forest spokesman is primarily concerned with results which assure the maximum benefits for the National Forests. Realistically, his objectives cannot always be sympathetic and consistent with the objectives of the S&PF Program. His approach is inherently subjective and cannot and should not be otherwise. Consequently, he should not be required to serve as the S&PF representative although he can and does serve well as a technical advisor or consultant in a particular speciality.

In some states, National Forest personnel serve on Rural Area Development committees and technical action panels when the assignments cannot be filled by the S&PF staffs. Even here, they either contribute from the National Forest standpoint or serve as reporters for S&PF. In these assignments, both NFA and research personnel should continue to serve as they do now.

C. S&PF RELATIONSHIP WITH FORESTRY RESEARCH

In addition to the financial support provided by the S&PF Program, the Forest Service can probably make its greatest contribution to State and Private Forestry through the Research Program. The S&PF staff is in a position to help make the state and private needs for research known and for translating the results into action programs through the State Foresters and the Service Forester organizations. For example, the 1965 timber trends study points out the need for the eastern 3/5 of the nation to provide increased timber harvests in the years ahead. Since the bulk of the commercial forest lands in this area are in state and private ownership, additional incentives must be provided in the form of greater economic return to produce intensified management of these lands. A major portion of this motivation can be provided through research in product utilization and marketing. The S&PF role in this effort is described in Exhibit "A". This is an excellent illustration of the close relationship between S&PF and Forestry

Research and is a commendable step forward in achieving a sound basis for coordination. In these and other research areas, the S&PF staff is the logical bridge between the state and private owners and Forest Service research.

D. REGIONAL FORESTERS' ROLE IN S&PF

The Regional Foresters are a powerful influence in the S&PF Program, particularly in the Western regions. By virtue of their positions, and the fact that they control such huge areas of the forest resources, they enjoy a great deal of stature with industry, local political groups, the Forestry community and the general public. They have access to large forest owners and high public officials. Their opinions are respected and their positions on a specific issue carry a great deal of weight. Consequently, they are in an excellent position to support the S&PF objectives and any change in the organization should, insofar as possible, take full advantage of their potential influence. However, the Regional Forester is only one man and he has many functions to perform. He cannot possibly devote more than a fraction of his time to S&PF. In the smaller Western Regions where the S&PF workload is relatively light in any one Region, it can get very little staff attention and only part of the time of the Regional Forester.

On the surface, separation of the S&PF functions from the Regional Foresters would open the door to some development of

duplicate staffs, essentially performing similar functions, which could be subject to public criticism as providing a built-in tendency toward waste of talent and resources. This is a real danger which cannot be overlooked. However, active executive attention can assure that the duplication of similar skills and capabilities is held to an acceptable level. For example, by locating the S&PF organization in the same area with the Research Regional Offices, administrative services and logistic support can be provided without developing a separate administrative staff in the S&PF office. Secondly, where specialized technical services are required that do not justify the establishment of full time personnel in the S&PF organization, they can be provided by the National Forest personnel at the Region, Forest or District levels on a reimbursable basis just as they are now in many areas. Separation would have the decided advantage of placing a high-level executive in the field with the sole responsibility for providing leadership in S&PF without the distraction or dilution of effort now present in many of the Regions.

E. PROPOSED FIELD STRUCTURE

Separation of the S&PF field organization from NFA would not require the establishment of a new field office in each existing Region. In the East, Region 8 has the largest area and workload in this program and could support a separate S&PF staff. Establishment of a single office to administer the S&PF Program for the states

now included in Regions 7 and 9 would provide two offices with approximately equal workloads for the Eastern United States.

In the Rocky Mountain area, Regions 1, 2, 3 and 4 all have small S&PF organizations staffed primarily with personnel having other functions to perform. In the overall picture, S&PF here is a part-time operation. The establishment of a single S&PF executive supported by a staff of 10 to 15 full time professionals would provide the means for an aggressive, vigorous program. The role of the Regional Foresters in this area is particularly significant and every effort should be made to retain their active support. It is recognized that this would be difficult, even with the active support and attention of the Chief, and a competitive relationship could easily develop. However, it is believed that this possibility would not outweigh the advantages of a single strong S&PF executive for the area.

On the West coast, the S&PF program is similar in Regions 5 and 6. A small full-time staff is provided and the state programs are active but heavily concentrated in fire control. Here again, more effort and leadership are needed in promoting other S&PF functions, particularly in the flow of information to and from the Research organization and support of the Service Foresters. Consolidation of the two staffs into a single S&PF organization should provide the means for carrying out a more aggressive program.

It is not anticipated that this organization would require additional staff to carry out the current level of the S&PF program. Because of the need for establishing a closer relationship with Research, the States included under each of the four proposed S&PF field offices should be adjusted so that the areas coincide with the Research field structure.

RECOMMENDATION 16. Establish a new S&PF field organization, independent of the Regional Forester and his staff, reporting direct to the Washington Office.

RECOMMENDATION 17. Co-locate the new S&PF field offices with the Research Stations to recognize the close relationship between the programs and to facilitate the provision of logistic and administrative support.

Agency Action. This idea has good possibilities in the East. The East, where the workload is heavy, will be reorganized with direct line control under two Directors of State and Private Forestry. One of the headquarters will be in Upper Darby, Pennsylvania, and will include the staff formerly of Regions 7 and 9. The other headquarters has not been chosen yet, but probably will be Atlanta, Georgia, to begin with and will include all of Region 8 plus Virginia and possibly other States.

The S&PF effort will be strengthened in all Western Regions and the positions elevated in Regions 2 and 4 to provide for full-time assistant Regional Forester positions for S&PF. The Research headquarters and the S&PF unit at Upper Darby, Pennsylvania, will be housed together. Additional adjustments may prove desirable in the future.

RECOMMENDATION 18. Continue to provide NFA types of specialized support from the NFA organization as needed.

Agency Action. Concur. Activation and forceful direction of this policy is planned.

Progress: Two new S&PF area offices have been established in the East. Elevation of S&PF positions in Regions 2 and 4 to Assistant Regional Forester level is being considered.

The policy on providing certain specialized support to S&PF from the NFA organization was fully implemented in the approved organization structure for the two new S&PF areas. This policy is receiving forceful direction nationally.

EXHIBIT A

UNITED STATES GOVERNMENT

MEMORANDUM

Department of Agriculture
Forest Service
Washington, D.C. 20250

To : Regional Foresters and Directors

File No. 4000
3000

From : Edward P. Cliff, Chief, By

Date: March 2, 1965

Subject: Research
State and Private

The enclosed policy statement is in response to requests from several Regions and Stations for the Chief's office to clarify the responsibilities of Research and State and Private Forestry (S&PF) in providing forest products utilization and marketing assistance to wood-using industries. This statement and accompanying chart, "Putting Research to Work," is intended to serve as a guide to developing an effective coordinated program of extending research results. It should be especially helpful in carrying out the Chief's Program of Work for Fiscal Year 1966 which calls for accelerated accomplishments in providing technical assistance to wood-using industries through program coordination and reduction of duplicated efforts and costs.

As pointed out in the statement, the S&PF technical assistance program will develop gradually to provide S&PF opportunity to recruit and train the staff required for this activity. Research will continue to provide technical assistance in coordination with S&PF in situations where S&PF is not prepared to assume full responsibility.

It is expected that this procedure will eventually result in greater efficiency in putting research results to work by freeing scientists of service and extension type jobs and by taking advantage of the large field force available to S&PF. Further discussion of the role of Research and S&PF in the forest products utilization and marketing field will be included in the Regional Foresters and Director's meeting, March 1-5.

Enclosures

cc: Rangers, Project Leaders,
and State Foresters

February 24, 1965

Policy for Coordination Between State and Private Forestry and Research In Getting Forest Products Utilization and Marketing Research Results Into Use

To improve program coordination between Research and State and Private Forestry (S&PF) a policy statement is needed to clarify and interpret the Forest Service Manual regarding the activities of Research and S&PF in providing technical assistance to forest products industries.

The purpose of this statement is to define the relationships between Forest Products and Engineering Research (FP&ER), Forest Economics and Marketing Research (FE&MR), and S&PF in providing research results, technical assistance, and service to wood users and producers. It is recognized that the task of getting research results into use cannot be satisfactorily accomplished through the efforts of either Research or S&PF working alone. A joint effort between Research and S&PF is needed on a continuing basis to accomplish the job. The solution of wood using problems will require (1) fundamental and applied investigations, (2) application of results on the ground and (3) technical assistance and services.

To accomplish these tasks the missions for Research (FP&ER and FE&MR) and S&PF are:

Research

1. Conduct research in forest products utilization and marketing (FSM 4031, 4703, 4804 and 4830).

2. Get the results of research into use (FSM 4031 and 4070). This may be accomplished by such methods as trial in field and pilot plant studies, through publications, periodic updating seminars, and presentation of findings at technical meetings. At the earliest possible step in the application process, S&PF will be brought into the picture. Training and updating seminars will be organized to prepare S&PF representatives for the task of disseminating research results (FSM 3061). Direct contact between Research and wood processors will be continued as needed to provide highly specialized technical assistance and for conducting research but will not be on an "on-call" basis nor involve day-to-day problems (FSM 3061). Generally, contacts with industry will be with the research and technical staffs and will involve problems in need of research or application of research results requiring the skills of the researcher (FSM 3061). These contacts may provide incidental technical assistance to the processors as a byproduct.

3. Assist S&PF in developing and carrying out a technical assistance program for forest products industries (FSM 3061 and 4044). Because utilization and marketing specialists are not now available in sufficient numbers and will need to be recruited and trained by S&PF, it is recognized that the program of technical assistance of S&PF is one which will develop gradually, just as the corresponding Research activity in the field of technical assistance must taper off gradually. The general Research objective of disseminating research results will be to limit activity to "wholesale efforts." In general, the handling of service work and day-to-day problems requiring technical assistance to operators and processors will be gradually turned over to S&PF with every effort being made to reduce confusion during the transition period.

Assistance will also be given to S&PF by organizing educational programs to train utilization and marketing men so they can properly guide interpretation and application of results obtained by Research (FSM 3061).

State and Private Forestry

The functions listed below are the responsibility of State and Federal personnel engaged in State and Private Forestry activities.

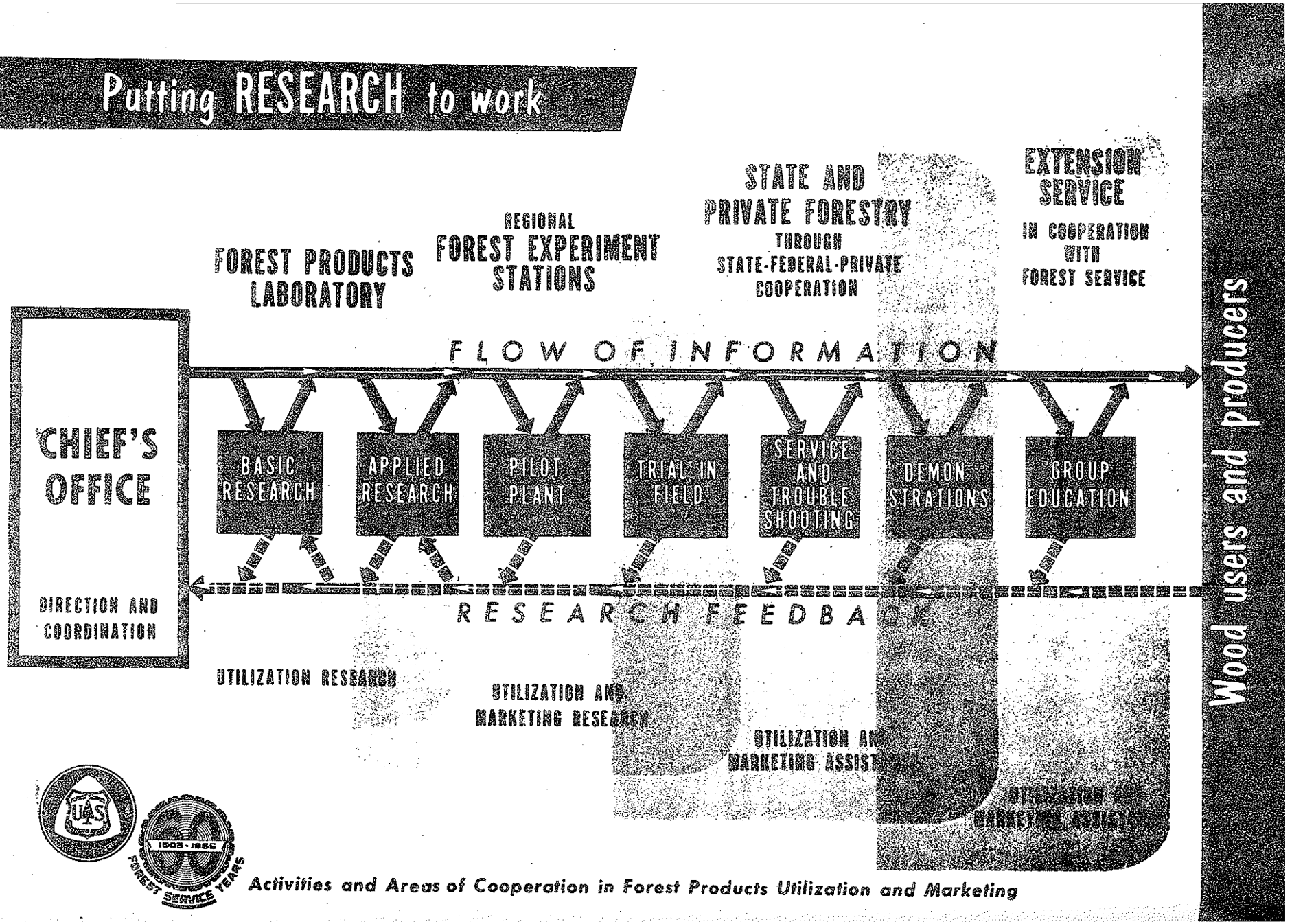
1. Apply research results on the ground in cooperation with Research, through assisting in field trials, and subsequently by independent direct contact with forest products industries (FSM 4044).

2. Give technical assistance and service, initially to processors who do not otherwise have available the needed technical personnel to interpret and utilize research findings, and later as S&PF personnel develop competence in more highly specialized forest products problems, provide assistance to the more advanced processors (FSM 3022, 3031, 3061 and 3222).

3. Establish cooperation and coordination between the S&PF utilization and marketing program of technical assistance and the Federal and State Extension Services' program in forest products utilization and marketing, dissemination of information, education, and promotion (FSM 3071).

4. Identify high priority forest products utilization problems that need study by Research and act as a link between Research and the industries being served by S&PF "Research feedback" (FSM 3061).

Putting RESEARCH to work



1903-1965 FOREST SERVICE YEARS

Activities and Areas of Cooperation in Forest Products Utilization and Marketing

V

MANAGING FORESTRY RESEARCH

- ORGANIZATIONAL LOCATION OF FOREST RESEARCH
- FIELD ORGANIZATION
- PROPOSED IMPROVEMENTS

V

MANAGING FORESTRY RESEARCH

A. ORGANIZATIONAL LOCATION OF FOREST RESEARCH

Before beginning a discussion of its findings and recommendations, the team considers it appropriate to comment on two issues it explored in the course of its review of the research program but which did not lead to its recommendations. Such comment may be of value to future study groups because of the basic nature of these issues. The first concerns the fact that forest research is organizationally located in the Forest Service and not in the Department's Agricultural Research Service. The team felt that this matter required analysis prior to any study of the existing organization. It is the team's judgment that the existing organizational location of forest research is proper, and that it serves to assure maximum contribution of on-going research efforts. Among the reasons which lead to this conclusion are:

- Forestry research is mainly geared to natural resource development and differs markedly from the ARS research.
- The effective leadership provided the Director of Science and Education for the Department serves to preclude overlapping and duplication of effort.
- Joint financing of research and National Forest Administration through the appropriation process contribute to a balanced approach.
- The present organizational arrangement is very successful in terms of research results.

The second issue explored after reaching the above conclusion involved the field organizational structure for forest research. Unlike the other two major programs of the Service (National Forest Administration and State and Private Forestry) which are the responsibility of each Regional Forester, the field research program constitutes a separate organizational structure with each Station Director reporting directly to the Deputy Chief for Research. The team considered all pertinent factors including cost, coordination, and program accomplishment and came to the conclusion that the present organizational independence of research in the field is both reasonable and logical.

B. FIELD ORGANIZATION

The historical basis for the forest research field organization is the McSweeney - McNary Forest Research Act of 1928. This Act authorized the Secretary, in his discretion, to establish a number of field research organizations. The Department was to carry out investigations, experiments, and tests in specific geographic areas, e.g., Northeastern States, Lake States, Rocky Mountain States, etc. As the result of the combination of some of these organizations, there are now ten Experiment Stations. Each Station supervises a number of research projects at field locations and provides appropriate administrative support to project personnel through a business management organization. The number of projects supervised and the total staffing by station is:

Station	No. of Projects	Permanent Personnel	Other Personnel	Total Personnel
Northern	6	30	8	38
Pacific Southwest	34	262	66	328
Central States	25	164	25	189
Inter-Mountain	36	184	74	258
Lake States	28	140	36	176
Northeast	26	172	43	215
Pacific Northwest	34	161	51	212
Rocky Mountain	34	140	53	193
Southeast	37	265	46	311
Southern	28	293	36	329
Total	288	1811	438	2249

Excluding the Northern (Alaska) Station the average Experiment Station is characterized by:

31 projects
198 permanent personnel
47 other personnel
245 total personnel

There is no policy in writing other than the language of the McSweeney-McNary Act which sets forth criteria for the present geographic location of the ten Experiment Stations. The rationalization for the locations involves consideration of silviculture types, physiography, land use patterns, forest economics and industry complex. However, it is the judgment of the team that the fundamental basis for the existence of ten Stations involves the attitude of top management relative to the appropriate span of control over the various projects under the supervision of the Station. Although there are variations among the Stations, the average number of projects per supervisory position is 7.7. On a projected basis (to 1972) and with the complete implementation of the Assistant Director organization in

lieu of the existing division chief set-up, the average number of projects per supervisor will rise to 9.0. The Service regards this as the optimum span of control level for effective supervision of projects.

The Service should reconsider its concept of span of control in determining the number of Experiment Stations required to supervise research projects. It may be desirable to allow a reasonable "shake-down" period to permit full implementation of the 4 Assistant Director organizations now being installed, but once this is achieved a re-evaluation study is appropriate. In making the study, consideration should be given to the following factors:

- Type of supervision required. Normally research requires very little supervision. Studies normally extend over several years and are the responsibility of the Project Leader who is qualified to proceed with a minimum of supervisory assistance. It is entirely possible that the commonality of a large number of projects will permit an Assistant Director to supervise far more than nine projects.

- Demands for external contacts. A major responsibility of Research Station personnel is to formulate problems in need of research and assign priorities. This requires considerable contact with users and other research groups.

- Station structure for giving research supervision. It is questionable whether present plans for having four assistant directors at each Research Station, without subordinate professional staff, would provide the most effective management. An assistant director with the necessary number of subordinates could cover a much larger number of field locations and have the advantage of providing more effective coordination because of the greater variety of research operations.

- Administrative and overhead costs. A major cost of Research Station operations is the administrative and overhead costs. These costs can be reduced materially by further consolidation of Research Stations.

The following information reflects expenditures (FY 1964) for Station administration (including the Director's office, the Assistant Director's and business management organization):

Southeast	$ 530,000
Southern	520,000
Lake States	369,000
Rocky Mountain	328,000
Inter-Mountain	480,000
Pacific Southwest	649,000
Pacific Northwest	428,000
Northern	95,000
Central States	369,000
Northeastern	329,000
Total	$4,097,000
Average	$ 400,000

The team is impressed with the Forest Service accomplishment in recent years in consolidating stations and field locations. It feels that continued efforts along these lines can still produce significant results. It is believed that four geographic areas such as Pacific, Inter-Mountain, North and South may be appropriate as effective field supervisory areas.

While the Service has concentrated a significant number of research projects at the Station headquarters, e.g. Berkeley, St. Paul, and Portland, most projects are located at some distance from the Station. To the extent possible, projects have been located with the following questions in mind:

- Where is the problem?
- Where can it best be attacked?
- Where can university support or other cooperation be obtained?

The Forest Service has given considerable attention to the matter of providing adequate administrative service to the research program. In each of its Stations it has established a business management office staffed with individuals with expertise in various administrative functions. In some instances, field extensions of the business management office have been established in locations where there were several projects in being. Except for engineering, fiscal, and contracting services (which are provided by the Regional Office), the research organization is administratively self-sufficient. In many cases, additional services such as personnel and office services can be provided more effectively by NFA staffs at less cost.

RECOMMENDATION 19. Make further study of the field requirements for Research Stations and reduce the number of such Stations to the minimum consistent with such needs.

> Agency Action: The Forest Service agrees to continue study of the number of Regional Forest Experiment Stations with a view to maintaining a number that will most effectively meet the requirements for rapid progress in research at lowest overall cost.
>
> Progress: The Central States Station was abolished and supervision of the research program has been shifted to revised areas of responsibility for the North Central, Rocky Mountain, and Northeastern Forest Experiment Stations.
>
> Plans for joining the Northern Station at Juneau, Alaska, and the Pacific Northwest Station at Portland are on schedule with a target date of October 1966.
>
> Continued study of possible Station consolidations is a part of normal program planning and review. Specific attention is being given to this as part of the General Research Inspections of Stations on a schedule reaching all Stations in a 5-year period.

RECOMMENDATION 20. Continue the Service-wide reappraisal of field project location consolidation possibilities.

Agency Action: Past and current practice of reappraising field location and research project consolidation possibilities will be continued. Substantial progress has been made in recent years with the elimination of research at 29 field locations. In fiscal years 1964 and 1965, 12 field locations were closed. There may be a few additional opportunities to reduce numbers still further, and evaluation of these possibilities will continue.

Progress: Reappraisal is being continued of field location and research project consolidation possibilities. One additional location has been closed.

A number of project consolidations have also been made as a result of program review and inspection.

RECOMMENDATION 21. Provide administrative and logistic support for field research activities from the Regional Office of NFA except where the Deputy Chief for Administration concurs that such arrangement is not practicable.

Agency Action: Concur.

Progress: A comprehensive study of station support activities has been completed and implementation has begun.

At the time of the study, projects were in being at 84 different locations with an average of about 5 projects per location. It is recognized that the Service has taken steps and is planning additional effort to reduce the total number of project locations and to consolidate projects when feasible. In addition, there has been a trend toward establishing laboratories where projects in a specific line of research are co-located, e.g., fire and genetics. At the same time it was noted that in other research areas, e.g., recreation and economics, the tendency had been to assign at least one project to each of nine or ten Stations.

C. PROPOSED IMPROVEMENTS

In consideration of improved management of the research program and the economy which can result from consolidation efforts, the team commends the Service and urges it to do even more. While such consolidation of project locations has a direct relationship to the organizational concept for Stations, of equal importance is the matter of cost. Each existing project location represents a significant investment in monies, e.g., in the past 4 years an average of $275,000 has been spent in the planning and construction at 33 project locations. The team recognized that pressures from outside the Service are continuously brought to bear to establish new or expand existing research locations. Nevertheless, the benefits to program management and economy of operation are such as to encourage resistance to such pressures to the maximum extent possible.

VI

IMPROVING ADMINISTRATIVE SYSTEMS

- ACCOUNTING
- PERSONNEL MANAGEMENT
- WORKLOAD ANALYSIS AND MANPOWER CONTROL
- DIRECTIVES CONTROL
- AUTOMATIC DATA PROCESSING
- CONTRACTING
- USE OF OTHER AGENCIES

VI

IMPROVING ADMINISTRATIVE SYSTEMS

A. ACCOUNTING

Present System

The accounting system of the Forest Service is a centralized system with each Region maintaining certain accounts and sub-accounts, predominantly prescribed by a chart of accounts from the headquarters level. Appropriate consolidation of such Regional effort into the accounts at the headquarters level provides the overall system of the Service.

Moneys made available by the Congress for Forest Service operations flow from several appropriation items. The method of financing the many activities of the Service preserves the multi-fund financing arrangement at all four levels of operation. It relies upon the accounting system to charge to the several appropriations, as well as to control the outer limits of such expenditures, thus protecting the integrity of appropriations.

In addition, in an effort to be responsive to requests for information relative to various costs and program breakdowns, the Forest Service relies upon its accounting system to supply such data. The net result of this effort is an accounting system with 107 functional accounts and 41 sub-accounts. When used in varying combinations for the

several appropriations, the result is 1090 line items.

From an organizational point of view, the Forest Service has its data assembly and sub-accounting at too low a level in the organization. Examples of this are the location of administrative voucher examination and certification functions at the Forest level, timber sales customer accounting at the District level, and billing and collection at the Forest and District levels. Thus the Forest and District offices, particularly in heavy program areas, have become strongly flavored with sub-accounting processes. The McKinsey Report of 1960 sounded a firm note of warning that the practice of performing data assembly at the action offices of the organization is uneconomical. Professional Foresters are not accountants, by training, vocation, or preference.

The Forest Service recognizes the need for mechanization and greater use of the computer and currently has a feasibility study in process for putting timber sale accounting on ADP. Centralization of fiscal work makes possible the realization of economies through mechanization.

The placement of sub-accounting below the Regional level ignores the presence of specialized technical personnel at the Regional level to supervise this kind of work and establish standards for its performance with greater dispatch than it can be performed at lower levels. An example is the recent transfer of the voucher examination function to the Forest level. Evidence is ample that the volume of voucher

examination workload paces the speed of accomplishment. Review of this work at the Forest level reveals that vouchers are examined, checked, and in some instances rechecked before certification for payment occurs. Such performance can only indicate an unsureness of technical proficiency and/or an insufficient volume of work of this nature to keep the assigned staff busy.

Current Improvements

The Coordinated Budgetary Accounting and Work Accomplishment Reporting System, being tested in Region 3, is strongly supported by the survey team. Its concepts should be enlarged upon as experience is gained in its application. This plan was one of the most refreshing and wholesome developments encountered. It relieves the Ranger of the responsibility for assuring that each work item be accomplished within a specific dollar amount, thus eliminating the requirement for excessive local fiscal records. Essentially these plans provide for the pre-charging of planned expenditures (approved projects) to various job numbers, which are keyed to appropriation sources. The pre-charging process is geared to known and proven standard costs for project work. In those instances where actual costs depart significantly from pre-charged costs, opportunity exists for making adjustments to the pre-charged records.

This plan also provides for a "formal feed back" to Regional officials, as well as Forest or District personnel, of current management data regarding the status of project work, from operational as well as fiscal control points of view. This feature should prove to

be a most useful management tool.

This plan claims to eliminate over 50% of the detailed work now involved in the on-the-ground estimating of project cost distribution, preparation of reports to flow through the Forest to the Region, punching of cards to capture such data, and the assembly of such data on a project and fund basis. In the opinion of Region 3 people, which is shared by the survey team, the present methods can only reflect estimates accumulated on a day-to-day basis, which are no sounder than the pre-charged "one-shot" estimates based upon known standard costs. Again, these developments are viewed as promising and should be encouraged and enlarged upon.

Suggested Direction

As a further development and refinement of the work now developing in Region 3, the Forest Service should positively explore the opportunities and advantages to be found in a one-fund financing arrangement for activities below the Regional level....indeed, perhaps, for the entire Service.

It is further suggested that the distribution of costs back to appropriation sources be facilitated by an improved and simplified work measurement system, which would feed results into the accounting system in summary form. This development would relieve the present accounting system by reducing the myriad of little pockets (sub-accounts) for the accumulation of functional costs. In this manner, the accounting system, as supported by a broad-based work measurement

system applied to work planned and work accomplished, would protect the integrity of appropriation fund accounting.

With respect to the centralization of voucher examination activity at the Regional level, the survey team is mindful of the estimated savings of approximately 35 man-years (Service-wide) when this work was decentralized to the Forest level. From field observation of how this work is now performed, it is apparent that an even greater saving would be realized by complete centralization of this function at the Regional level. Voucher examination and certification is a specialized, technical, high-grade clerical function which thrives on volume operation. It is, of course, dependent upon an administrative certification from the field that work or services were performed or furnished. Arguments against decentralization advance the thought that the Forest or District must audit the voucher in its entirety in order to certify administratively to receipt or performance of service. This argument cannot be supported. All that administrative certification entails is a simple statement that something was done or furnished in exchange for which reimbursement is claimed. The job of detailed examination and certification of the voucher for payment is a specialty and should be treated as such. Conditions leading to the decision to decentralize voucher examination may have been a laborious, far-too-detailed process of administrative certification. Remedial action should have corrected this situation and left the examination process in the hands of

specialists who could handle the work on a volume basis.

There appears to exist a real need for the Forest Service to commission a team of qualified systems analysts to conduct a thorough analysis of its existing accounting and data assembly systems with a view to simplifying processes as well as to analyze operations in light of "on order" computer capability. The accounting and data assembly systems should take advantage of the full power of the computer. These studies could include such matters as: the level and manner in which the most effective and efficient billing and collection arrangements should be conducted; the processes involved between the Forest Service and those segments of industry with which it deals, with a view to the development of improved paperwork, document flow, and financial arrangements; the possibilities of by-product ADP applications to provide needed data now secured from the accounting system; the possibilities of bringing into one total systems concept all paperwork connected with timber management and timber sales activity; and a review of other program systems, particularly from a data assembly and processing point of view. This team should include a top flight accounting systems analyst, the best organization and methods specialist that can be acquired, and a third to be thoroughly versed in commercial timber sales and financial matters.

RECOMMENDATION 22. Simplify expenditure accounting at the Forest and District level through reduction of accounts, formal distribution, and direct accomplishment reporting to meet the minimum needs of management, Department, General Accounting Office, and the Bureau of the Budget.

Agency Action: Concur. The trial system under study in Region 3, as mentioned in this report, and a "Management Information System" study now under way will include the action involved in this recommendation.

Progress: The pilot system in Region 3 will be evaluated in fiscal year 1967. Additional efforts are being directed to developing the Management Information System.

RECOMMENDATION 23. Transfer full responsibility for timber sale accounting, billing, and collecting to the fiscal segment of the organization at the Forest, Regional, and Headquarters level.

Agency Action: Concur. Transfer of the paperwork aspects of this job was recommended by a recent National Forest Business Management Study. More positive action will be initiated to assure the transfer within the next 60 days.

Progress: On November 5, 1965, specific information was requested from the field on the dilution of business management responsibilities indicated by the recommendation.

The reports have been received and analyzed. Revised guidance material has been distributed.

RECOMMENDATION 24. Establish a special study team to thoroughly reexamine the legitimate requirements of management for fiscal data and accounts, and develop the most efficient system possible for the conduct of fiscal transactions, data collection, accounting, and reporting.

Agency Action: Concur. The larger segment of this recommendation will be accomplished by action under Recommendation 22. Additional action will be scheduled concurrently where possible or following completion of current studies.

Progress: The progress shown for Recommendation 22 also applies to this recommendation.

RECOMMENDATION 25. Review implementation, quality standards, and savings under centralized versus decentralized voucher examination.

Agency Action: Review of practice will be made by December 1, 1965.

Progress: Review has been completed and the present decentralized approach has been reaffirmed.

B. PERSONNEL MANAGEMENT

The esprit de corps, high level of professional ability, and dedication to the Forest Service mission speak well for the personnel management of the Service. These are things that do not result from procedures or systems but rather from a sound personnel management philosophy of the Chief and all supervisors of the Service. The team was quite impressed with the responsiveness of Forest Service personnel at all levels.

Training

Considerable attention is given to training in the Forest Service. New methods of management training and modern techniques such as programmed training are being used. However, in spite of all the training courses and on-the-job coaching available to professional personnel, the program still has a serious deficiency. Too often professional personnel enter from college and are assigned directly to a specialized job at a District and stay in that specialty for two to four years. The need for specialists is unquestioned, but the time for specialization is after two or three years of general experience rather than immediately upon entering the Service. It should not be overlooked either that there is a real need for generalists at all levels in the organization. A need exists for a mandatory program of planned experience for new professionals in forestry, engineering, administration, and possibly

some of the other professions. This program should give the new professional recruit exposure to all the types of work offered by the Forest Service for which his academic background is appropriate. This would give him a better basis upon which to decide whether he desires to specialize and in what type of work; and it would give the Forest Service a better opportunity to appraise his potential.

The team found strong interest and support for such a program in the field. To be successful this kind of program must be made mandatory by the Chief; otherwise, the pressure for day-to-day production will take priority.

Personnel Procedures

At the Forest and District level the team found considerable paperwork in the employment of temporary workers. This relates to answering inquiries about employment, setting up competitive registers, the number of job categories for GS-2 and GS-3 work, and the multitude of forms involved. In discussing this matter with headquarters personnel officials, the conclusion is that much of the work being done is contrary to instructions and that much can be done to lessen the current paperwork load at Districts and Forests.

Decentralization of Personnel Function

Currently a program is under way in most Regions to decentralize classification and other professional personnel work to the Forest level. Heretofore, Forests have had a personnel clerk for the initiation of personnel actions and keeping of necessary records for use at the Forest. This can be a rather expensive change in the personnel program. It

means increasing the grade of the top personnel job from GS-5 to GS-9 or 11. Even then the quality of staff assistance could hardly equal what is now available from Regions where the professional personnel staff are GS-9 through GS-14. Along with higher grades for personnel at the Forest, the change will no doubt result in an increase in staffing with no decrease at the Regional Offices.

The concept of assigning professional personnel staff with line management at any level is endorsed so long as the field segment is large enough to justify such staff. A minimum of 400 employees within the authority of the personnel staff is suggested as a reasonable standard for decentralizing professional personnel work.

RECOMMENDATION 26. Establish a mandatory planned experience training program for professionals.

Agency Action: Concur.

Progress: An Engineering Training System has been designed and similar plans are underway on other professional personnel.

RECOMMENDATION 27. Reduce job categories for temporary employees and simplify procedures.

Agency Action: Concur.

Progress: The USDA Office of Personnel is currently reviewing a Forest Service request to seek modification of Civil Service Commission regulation governing seasonal employments.

The Office of Personnel approved a proposal to simplify wage setting and job titles for firefighters. This proposal has been sent to the Regions for review prior to implementation.

RECOMMENDATION 28. Establish more restrictive criteria for the decentralization of the personnel function to Forests.

Agency Action: Concur.

Progress: Action is under way.

C. WORKLOAD ANALYSIS AND MANPOWER CONTROL

The Forest Service workload analysis system is described as a technique for measuring the financing and staffing necessary to carry out the functions of each field organization. Periodically, the volume of business for each item of work is determined for each unit. Time allowances, predetermined on the basis of individual studies, are then applied which produce measures of the total man-hours required to carry out each job. The result is then translated into the dollar requirement and forms the basis for the submission of a budget. After funds are appropriated, they are distributed and redistributed through the Regions and Forests to the Districts, using the work plans as a basis with some adjustments to meet local conditions.

Deficiencies

Although it is sometimes described as a work measurement system, the Forest Service workload analysis system is in fact only a system which produces planning factors for use in preparing budgets, staffing plans, and work plans. It has two major deficiencies which prevent its making a maximum contribution to management:

1. It is overly complex for the needs of the Forest Service. The system for developing the planning factors, or time allowances,

is a mixture of statistical standards based on Methods, Time, and Motion Studies (MTM), and Engineered Time Standards (ETS). Both MTM and ETS are industrial engineering techniques which are applicable to repetitive production line operations or jobs. Under these conditions, the results from one job can be applied readily to other jobs. Although periodic evaluations using MTM and ETS techniques are useful in establishing work standards, they produce an excessively burdensome and costly paperwork operation when carried out on a continuous basis. This is the case with the Forest Service workload analysis system.

The processes employed in the operation of the system are so extremely detailed and precise that the system is ponderous and awkward. For instance, at the District level 205 items of work are measured... at the Forest Supervisor level some 293 items are measured...at the Regional level approximately 180 work items are evaluated. It is difficult to conceive that a Ranger District would require the analysis of over 200 work items to develop its staffing pattern, particularly when about 60 percent of the Districts have less than five professional employees. Certainly a small number of predominant and more significant items would suffice for such determinations.

The system is designed for use in establishing staff requirements for work organizational units. However, in no case did the survey team find any evidence below the Regional level of the system's use for this purpose, other than as a "guide." In response to a direct question concerning the use and worth of the system, field officials' responses

were consistently veiled and ambiguous. A workable, effective system must be capable of being understood by those whom it is designed to serve.

2. It does not provide line management with an effective tool for measuring output in relation to established standards or goals in terms that permit evaluations or comparisons of performance of individuals or organizations. The only significant feedback for line management is provided through the work planning and reporting system which reports man-hours expended in relation to planned hours for completion of a job. Insofar as line management is concerned, it does not provide a necessary means of performance evaluation for decision-making.

Work Accomplishment Standards

For operations such as the Forest Service land management functions, broad work accomplishment standards are a much more effective tool of management, at far less cost, than MTM or ETS, where there are neither production-line nor mass production jobs being performed. The basic workload analysis data now available to the Forest Service on its own activities will provide ample basis for the defining of far fewer broad work items, development of production rates, and the development of an adequate reporting system for "feedback" on work accomplished, rates of production, status of planned work, and other significant management data required.

RECOMMENDATION 29. Expand the workload analysis system to include accomplishment reporting keyed to work plans, reporting unit times only for a reduced number of work items.

Agency Action: Concur.

Progress: Percentage to total workload determined by each work item has been calculated. Analysis of items which can be eliminated is underway. Approach to the analysis has been reviewed by the Bureau of the Budget. Further progress will follow the Region 3 Pilot System evaluation in fiscal year 1967.

D. DIRECTIVES CONTROL

The directives system of the Forest Service is a highly formalized, well established, effective system in which all applicable laws, regulations, orders, policies, and procedural instructions are brought together in a single series of publications which make up the Forest Service Manual. The system provides for the issuances of supplemental material by the Regional Offices as necessary to fit local conditions. The major deficiency found in the system is the rather loose control of the supplements at the Regional level. To a much lesser extent there is a need for improvement in the handling of directives in headquarters.

Each Regional Office has a single control point through which all supplements are cleared and distributed. However, for the most part this has operated as an editorial review and distribution control point, rather than a "Directives Control Point." Although this was not the intent of the system, there are many variations in the quality, type, and volume of material arriving at the Ranger Districts. Some

staff offices are extremely prolific and go so far as to assure that a supplement is issued on each item issued by headquarters. Others depend almost entirely on the headquarters issuance and prepare supplements only in rare cases. The result is voluminous material with excessive detail in some areas and very sparse coverage in others. Similar differences appear in the quality of instructions depending upon the interest and skill of the particular staff offices concerned.

Probably of greater importance are problems resulting from the usual practice of the initiating office having the responsibility for coordinating with other interested staff offices and of permitting staff officers to sign the directives as "Acting Regional Forester" either under the rotating assignment or under their functional authority. Coordination is frequently incomplete, resulting in inconsistent or incorrect material which then has to be amended. The administrative official serving as the "Directives Control Point" has neither the technical background nor the authority to control these aspects effectively.

Under the present system, copies of all Regional supplements are submitted to the Washington Office where they are presumably reviewed by the staff divisions concerned. The fact is that the volume of material is so great that it cannot all be reviewed in detail nor is the manpower available to handle all of the correspondence

that would be generated by a real effort to control the issuances at this level. Further, this is an after-the-fact review that in this case is too late to prevent the impact at the District level.

Control shall be exercised at the Regional level before the supplements are issued. This can be accomplished through the assignment, in each Region, of a staff official technically capable of assuring coordination with all necessary functional groups and by retaining the authority to release the supplements in the hands of the line officials, rather than permitting the functional staffs to issue them under "Acting" authority. This same kind of technical review and line approval is needed for all directives originating in headquarters.

RECOMMENDATION 30. Strengthen the system for directives control at headquarters and Regional Offices by:

a. Providing a centralized technical review of all amendments, supplements, and emergency directives to assure proper coordination and evaluate both necessity and quality.

b. Assign approval authority only to line officers at each level.

Agency Action: Concur.

Progress: This recommendation was fully implemented by Amendment No. 1 to Forest Service Manual--Title 1100, dated January 1966.

E. AUTOMATIC DATA PROCESSING

The use of automatic data processing (ADP) equipment in the conduct of its operations is not a new experience for the Forest Service. It has long utilized EAM equipment. By contract means it has utilized a variety of configurations to accomplish work, including some more sophisticated ADP hardware.

The Service has determined that an in-house ADP system, under its immediate control, will be to its advantage. This view is shared by the survey team. In fact, the decision to redesign its system to take advantage of the full power of modern ADP equipment is probably long overdue.

ADP appears to offer considerable attraction to several Forest Service activities, both from an economic as well as an improved service point of view. The areas of road design, timber management and sales, and the accounting system should provide immediate pay-offs and will serve as "bread and butter" ADP applications. Other significant phases of Forest Service work are looked upon with the hope of ample reward from ADP applications. The whole area of basic statistical data assembly and the manipulation of such data by ADP for the purpose of aiding management decisions offers a fertile area for improvement opportunity. Other work processes seem to be logical and fruitful areas for study and development. These prospective applications represent work now accomplished by conventional means, ranging from manual effort to less sophisticated machine effort, some

some in-house--some on a contract basis.

The survey team senses a skein of "blue-sky" thinking and hope threading through some area of the Service. This in itself is wholesome if properly directed. But such thinking can lead to disappointments and frustrations if not tempered with a full understanding of just how rapidly some of these objectives can reasonably be attained. The step from computer administration planning, to the responsibility for system design, programing, testing and "debugging," scheduling of work and the operation and living with a computer is indeed a sobering experience.

Specifically, the utilization of the computer for resource management problem solving purposes, involving the introduction of statistical equations, formulae to reflect the probabilities of future happenings, and related processes involving linear programing techniques, are, in fact, a long way down the road for the Forest Service....perhaps at least a generation or more of computers on the horizon. This is not to discourage the task of carving out and redesigning its costly manual systems to a computer functioned business which may well span from three to ten years of concentrated effort. This concept should shape its operational climate and emphasis as the Service moves to a computer based organization.

ADP Equipment

The survey team has reviewed the four volume documented study made by the Computer Usage Company, Inc., during the period of June 29 - November 20, 1964, wherein it was recommended that the Forest Service purchase four CDC 3100 computer complexes. These computers are to be

located at Portland, Oregon; Missoula, Montana; Ogden, Utah; and San Francisco, California. This feasibility study adequately reviewed the existing ADP facilities at these locations. Its recommendations for enlarged ADP capacity are viewed with approval. The comparative analysis of several machine supplier configurations seems to be in order. Considerable attention was devoted to machine time requirements as conditioned by workload estimates and the consultant considered two alternative structures for rendering in-house computer service.

As a result of the feasibility survey and Departmental and Bureau of the Budget approval, a purchase order was issued by the Forest Service to purchase four ADP configurations, as recommended by the feasibility survey, for Regions 1, 4, 5, and 6. Site preparation is currently under way at these four Regional Offices.

The survey team feels that the workloads of Regions 2 and 3 should have been included in the study. While these Regions represent a somewhat smaller total volume of work as compared to other western Regions, the unit cost of work they do perform is likely to be far greater than comparable work units in heavier volume areas. In other words, ADP techniques applied to the marginal areas in Regions 2 and 3 could be accomplished at very little additional cost particularly if computer time is devoted to such work on in-house computers for heavy volume areas. The Forest Service proposes to serve these Regions by leased computer time. This area needs further study and analysis.

ADP Personnel

The adequacy and depth of ADP staffing to be ready for the delivery of ADP equipment gave rise to considerable concern by the survey team. Computers will be delivered beginning in September and October 1965. When the team visited Region 1 in April 1965, no programmers or systems design personnel were on the rolls. Subsequent developments reveal that three persons would be enrolled in a programming course at an early date, and the qualifications of seven other persons were being examined for possible entry into another programming course to be held at a later date. This advance preparation to receive the ADP equipment is far too late and can only delay effective ADP production.

ADP Program Scope

With respect to the ADP servicing of existing Regions 2 and 3 by owned ADP equipment located at San Francisco versus contract means, comparative mail times between random Forest and District points throughout the West to respective Regional Office locations, as against likely computer site locations at Portland, Oregon; San Francisco, California; and Denver, Colorado, were reviewed. The vast majority of inputs, utilizing the fastest mail facilities, would be about the same to any of these three points as it would be to respective Regional Office points. In no case would the time exceed two days. The survey team encountered no demands for input/output requirements which these normal fastest mail times would not satisfy.

The issue of machine capacity is no problem. For instance, the ADP configurations now on order for the four big western Regions will handle

the existing Forest Service ADP workload with an expenditure of one-half of a prime shift; the second and third shifts, as well as weekends, will provide a cushion for the development of new programs, testing, "debugging," and related matters. In addition, the modular design of the computers on order will permit an expansion of machine capacity, if needed.

The Forest Service should gain experience in the rendering of ADP service by a Region having a computer under its control to another Region not so equipped. It is reasonable to assume that before the Forest Service can completely adapt its operations to ADP techniques, another generation of computers offering greater speed, memory, flexibility, and lower unit costs of operation will appear on the market. These developments cannot and should not be ignored. In that event, the Forest Service should seriously consider the centralization of ADP service for the entire West--indeed, perhaps the entire Service. In the meantime, it will have acquired the know-how of inter-Regional sharing of computer facilities.

RECOMMENDATION 31. Reexamine the ADP organization with a view to providing adequate depth and strength of total ADP disciplines.

> Agency Action: Concur. Action is now under way to achieve more adequate and competent strength.
>
> Progress: Organizational realignments have been approved for ADP work. Recruiting for adequate depth and strength is under way. Good progress has been made even though qualified candidates are scarce.

RECOMMENDATION 32. Take positive action to render ADP service from Forest Service-owned ADP equipment to Regions 2 and 3.

Agency Action: Concur in having Region 4 (Ogden, Utah) provide service to Region 2 (Denver, Colorado). Region 3 (Albuquerque, New Mexico) will have service available from Bureau of Indian Affairs equipment. Cost and service factors will be considered in making use of Forest Service-owned equipment.

Progress: Action is under way and on schedule. Bureau of Indian Affairs is providing ADP service for Albuquerque, New Mexico (Region 3).

F. CONTRACTING

The survey team views with approval the expanded use of contracting for services to accomplish work on National Forest lands. With the development of greater knowledge and abilities by the Service in the contracting field, the promise of greater accomplishments and returns is much in evidence.

As an example of the expansion of the use of contracting, the experience of Region 4 reveals the following comparison between 1956 and 1964:

Number of bids	72	237
Roads and Trails	$520,227	$2,801,290
Other Construction	124,083	1,579,474
Services	40,033	341,044
Supplies and Equipment	33,662	236,042
Total	$718,005	$4,957,850

Inquiry concerning the relative costs of work performed by contract versus force account labor demonstrates that the contracting device often has a decided advantage. In one District, fencing by contract cost $375 per mile, whereas force account arrangements cost $500 per

mile. Timber stand improvements under contract cost $20 to $25 per acre as compared to $30 to $35 per acre by force account. Other areas of work displayed similar significant cost savings when performed under contract. In the interest of cost reduction further contracting for services offers significant opportunities.

On the other hand, certain disadvantages occur when force account employees are lost because work is performed by contracting for service. Force account labor can be temporary, but the foremen for such work groups are usually full-time employees. Their presence for emergency situations, such as fire-fighting, has been invaluable. Too, there is an advantage to the Forest Service to maintain its ability to accomplish work through force account means. At times, responses to invitations to bid exceed reasonable and expected costs. In these situations, the Forest Service should be in a position to carry out work, drawing upon its internal resources.

The answer to the above disadvantages of contracting for services seems to be a middle-of-the-road approach. While there is much additional work that can and should be accomplished by contracting, it should be tempered by the retention of some in-house capability to perform force account work.

Some concern was in evidence regarding the impact of contracting for services upon the average grade and salary of full-time employees. It is true that contracting for services tends to reduce the percentage of lower grade employees in relation to total employee strength. However, in view of the favorable cost-savings experienced by the

Forest Service in the use of contracting, the survey team feels that a reasonable case can be made for relief from the average grade and salary limitations in these specific areas.

In discussing work activity with contracting officers at the Regional and Forest levels, the survey team detected a need for some administrative vehicle designed to share experiences, methods, and techniques among the many contracting officers. Such a communications medium would hasten the development of greater contracting know-how throughout the entire Service.

In recommending and encouraging the expansion of contracting for services, the survey team urges that adequate criteria be developed to serve as a guide in the assignment of full-time contracting officers at the Forest level. In those instances where workload does not warrant a full-time contracting officer, it is entirely feasible and proper that some other qualified administrative employee could handle these responsibilities.

RECOMMENDATION 33. Establish a temporary clearinghouse newsletter for exchange of contracting information.

Agency Action: Concur. Existing quarterly publication "Management Notes" will be used.

Progress: Implementing action has been completed.

RECOMMENDATION 34. Establish workload criteria for assignment of full-time contracting specialists at Forest levels.

Agency Action: Concur.

Progress: Work is proceeding on schedule. Criteria will be available for fiscal year 1967.

G. USE OF OTHER AGENCIES

Office of the Inspector General

The Office of the Inspector General was created within the Department of Agriculture to perform all investigatory work involving civil, criminal, and personnel management cases. The Forest Service is using its own personnel to perform the audits and investigations in many areas of Forest Service work. However, for many technical and specialized areas of work of the Department of Agriculture, the Office of the Inspector General is currently performing audits and investigations in a commendable manner.

Audit activities being conducted by Forest Service personnel include:

a. Cooperative work programs with States;

b. Research cooperative aid agreements;

c. Commercial public use permits;

d. Timber cost verifications;

e. Special permits and licenses (such as Smokey Bear).

Investigative activities being performed by Forest Service personnel include:

a. Range trespass;

b. Occupancy trespass;

c. Accidents and claims where there is no indication of misconduct or gross negligence on the part of the employee;

d. Timber theft cases, which sometimes involve referral to the FBI if specialized skills are needed to deal with aggravated situations;

e. Forest fire cases, which sometimes involve referral to the FBI when incendiarism is believed willful or malicious, or they are in locations where numerous fires have occurred such as to indicate willful and malicious action.

It is recognized that Forest Service programs are often administered in remote areas and that familiarity with local conditions may sometimes justify immediate investigative effort by Forest Service personnel. There would seem to be less reason for the Forest Service to continue most of its audit responsibilities. The issue, however, is a matter of policy and jurisdiction. Services rendered throughout USDA by the Office of the Inspector General suggest that the OIG is capable of prompt and effective assistance.

RECOMMENDATION 35. Give joint consideration by the Forest Service and the Office of the Inspector General to the audit and investigative work remaining in the Forest Service, with a view to reconciling the matters of policy and jurisdiction involved and assumption of responsibility by the OIG where feasible and practicable.

Agency Action: Concur.

Progress: Preliminary discussions between the Forest Service and the Office of the Inspector General have been held. Action will continue.

GSA Motor Pool

The Forest Service programs throughout the Nation involve extensive use of automotive equipment, which includes passenger cars, trucks, and motorized units for road-building and fire-fighting. The Agency manages its fleet operations through a working capital fund involving charges to appropriations in accordance with the uses made of such equipment.

In some areas the Agency utilizes interagency motor pools, provided by the General Services Administration. A high level of satisfaction with GSA passenger cars and light trucks was reported in these areas.

The survey team concluded that more use of GSA vehicles would decrease Forest Service workload in several respects:

a. It would eliminate need for repair shops now maintained in some places;

b. It would curtail accounting effort associated with the working capital fund;

c. It would eliminate the procurement effort entailed in direct purchase of vehicles;

d. Reliance on GSA would assure flexibility in acquiring vehicles as needed, for short-term or long-range needs.

The present outlook is, however, that certain types of heavy automotive equipment and specialized units would remain the responsibility of the Forest Service.

RECOMMENDATION 36. Develop with the General Services Administration a determination of its long-range plans for motor vehicle pools and systems of operation. On this basis, criteria should be established as to how GSA and Forest Service fleets, currently and ultimately, can be more efficiently coordinated. These criteria should provide for use of GSA pool services wherever reasonably available within the context of a coordinated system.

Agency Action: Concur.

Progress: Meetings have been held between GSA, USDA, and Forest Service representatives. Plans are now being developed to implement needed studies. Agreement has been reached on procedures and a fine spirit of cooperation exists between the agencies involved.

VII

ADJUSTING FOREST LAND OWNERSHIPS

- LAND EXCHANGE PROGRAM
- LAND EXCHANGE PROCEDURE
- LAND LINE LOCATION
- LAND STATUS RECORDS

VII

ADJUSTING FOREST LAND OWNERSHIPS

A. LAND EXCHANGE PROGRAM

The land ownership patterns in the National Forest units are quite irregular. In some cases less than 10 percent of the property within the boundaries is owned by Forest Service. These patterns are primarily due to the previous patenting under public-land laws or the way in which the land has been available for purchase. Exhibits "A" and "B" illustrate the two most prevalent patterns. Exhibit "A" shows the checkerboard pattern in the West resulting from such practices as the grants to the railroads of alternate sections of land along their rights-of-way or service areas. Exhibit "B" is an Eastern area in which lands were not available to permit acquisition of the total area.

The results of these scattered ownership patterns are varied and costly. They create conflicts when private owners object to public programs of use on adjoining Forest Service land. Some privately held inholdings are a source of direct damage to the Forest Service lands. They create astronomical needs for surveying and marking interior boundary lines for exchange of rights-of-way for access and use. Such patterns multiply unit costs of road development, increase needs for fire protection and general administration, create hazards from fire or trespass and complicate the processes of implementing management plans on small, uneconomical tracts of land.

These problems are as troublesome and costly to the private owner as they are to the Forest Service. Exhibits "C" and "D" are examples of endorsement by private landowners of the need for consolidating holdings and the use of land exchanges as the most appropriate means for consolidation. Further support of the problem and the approach of solution by exchange is evidenced by the backlog of proposals awaiting action in the Forest Supervisors' and Regional Foresters' offices. In some cases, several years' backlog is on hand, even though exchanges are usually being discouraged. It was generally stated that a much larger number of cases could be initiated if any effort were made to encourage proposals from private landowners.

Direct benefits to the Federal Government as a result of consolidation of ownership through exchanges are easily identified. For example, one of the major land programs involves surveying and marking the National Forest boundary lines to protect against trespass, loss of valuable resources, and misuse of the property. There are currently about 281,000 miles of boundaries on lands administered by the Forest Service. Of this, 48,000 miles are in the Eastern areas where the cost of marking property lines is about $125 per mile. Former public domain lands represent 233,000 miles in the West where the line marking averages $175 per mile. About two hundred thousand miles is unmarked at present and will cost about $36 million to mark to standard. In addition, a continuing program is underway to search and re-establish corner markers on previously surveyed lands. At

present, there are about 352,000 corner markers to be searched in the Eastern areas where about 123,000 will have to be re-established at a cost of $200 per corner or a total of $24 million. Similar work underway in the West is costing about $1000 per corner for a total current requirement of $780 million, although it is expected that this cost may be reduced to $500 per corner. Thus, the present known requirement for boundary work (surveying, marking, re-establishing corners, etc.) underway is somewhere between $475 million and $850 million. This includes about 10,000 corner markers that the Forest Service estimates are being lost each year, because of the ravages of time and lack of maintenance, which will have to be replaced at a cost of $1000 each or $10 million annually. Further costs are incurred of over $1.5 million to maintain the 281 thousand miles of lines. In summary, present boundary lines require a one time expenditure of between $475 million and $850 million with an annual maintenance cost of from $1.5 million to $10 million. Consequently, every mile of boundary that can be eliminated will not only reduce management problems but will also produce several hundred dollars in cash savings. Exhibits "E" and "F" are outline maps showing Forest Service holdings before and after an exchange. In this particular case, involving an exchange of less than 30 thousand acres, the interior boundaries were reduced by 114 miles with a slight increase in Forest Service acreage. In addition to the savings in boundary work, reduced road system needs for the area resulted in a savings of $300,000. The total savings achieved

from boundary line reduction through land exchange during the past three fiscal years were:

Fiscal Year	Exchange Cases Consummated	Miles of Boundary Reduction	Dollar Savings
1963	87	350	$180,250
1964	74	590	303,850
1965 (Estimated)	100	800	412,000

The specific achievable reduction in boundary lines through exchange is difficult to measure. However, the total boundary lines exceed 280 thousand miles. A ten-mile square of the Western checkerboard land shown in Exhibit "A" would have a total of 200 miles of boundary lines - 72 miles of exterior boundary and 128 miles of interior. Consolidation of this holding by exchange of half of the area could result in a solid ownership of the same acreage with a total boundary of only 30 miles - a reduction of 170 miles.

The current program objective to acquire 1.5 million acres through exchange by 1973 is set forth in the Development Program for National Forests, November, 1961. The current funding of about $675,000 per year is producing only about 130 thousand acres, although the more than 30 months average time to complete each transaction does require a pipeline buildup. The Ten-Year Development Program also states that the total inholdings not under Forest Service administration are nearly 40 million acres, of which 720 thousand acres is needed for recreation and 7 million is needed for other purposes. Further, the long Range Land Ownership Adjustment Plan for Region 6 (which has more than 99 percent of the lands within its Forest boundaries) sets

forth a requirement for the acquisition by exchange of 1.025 million acres for that Region alone and identifies about .5 million acres suitable for disposal by exchange. The survey team has therefore concluded that a more desirable goal for a short-range exchange program primarily aimed at achieving the most desirable ownership patterns is probably somewhere near 15 million acres out of the total of 40 million acres, or about ten times the current ten year objective. Such a program needs to be fully documented in terms of the cost-benefit relationships and presented for special attention through the Secretary, the Bureau of the Budget, the White House and the Congress, rather than handled as a routine budget item buried in the normal process.

B. LAND EXCHANGE PROCEDURE

Internal studies of the exchange procedure have revealed that, although the small number of cases reduced the validity of general statistics, the average case requires something more than 2.5 years. 1.5 years is field work in preparing and processing the case for submission to the Washington Office and three months for correction and re-submission. Exhibit "G" is a gross analysis of this procedure. Some of the steps, such as the one month for advertising and two months for acceptance of the title and issuance of the patent, probably cannot be expedited. However, the balance of the time is susceptible to improvement and streamlining. Some procedural changes can be made, such as direct submission to the Attorney General from the Regional

Offices for title review. However, the bulk of the time is consumed by inexperienced personnel (Rangers and District taffs) in preparing the documentation and carrying out contact work, research and negotiation on a part-time basis, and by the review and correction required by the Forest and Regional levels.

With over 822 Ranger Districts and up to 100 exchanges each year, it is obvious that no District can have enough cases to handle to develop any degree of expertise in this area even though over 200 field people have been given formal appraisal training. The processes of negotiating real estate values, searching land titles and records, researching and evaluating land sales, appraising land values, and documentation of explanatory and justification material are extremely intricate fields of professional specialization. Extensive experience and training are necessary to produce the required proficiency. Foresters working on a part-time basis handling an occasional case cannot acquire the necessary expertise - and the exceptionally intelligent, diligent Ranger who can perform satisfactorily in this area does not disprove the basic conclusion. Also, there is no prospect of there being a large enough volum of work at the District level to justify the employment of a full time specialist. The same is true at the Forest level except that a crash program might produce such a volume on a short range basis. However, this function is a continuing one which must be competently staffed as a permanent function to handle exchanges and the impending recreation acquisitions.

Therefore, it should be centralized at the Regional level. This would provide a competent staff to handle all aspects of each case (except Timber Appraisals which could be handled by the Forest or District on a project basis) and eliminate the intermediate review levels with their built-in tendency toward delay and rewrite. Such a centralized competent staff should also be capable of handling additional delegations of authority as well as eliminate delays resulting from Washington Office reviews.

C. LAND LINE LOCATION

The need for and benefits resulting from accurate corner and boundary lines in the National Forests has been described earlier in connection with the Land Exchange Program. Although these lands were surveyed and marked at one time, prior to 1958 there was no provision for maintenance of the corners and lines by the United States. Weather, fire, material deterioration, vandalism and other factors have caused their disappearance. In 1958 it became necessary to initiate a program to locate and perpetuate the markings and assure accurate, current evidence of the property lines. Exhibit "H" is a summary description of the current program. In the seven years since the work was initiated, about 10 percent has been accomplished. At the current funding rate, the total program would be completed in from 20 to 70 years, assuming a completely static land situation. However, changing ownership patterns, lack of maintenance funds and other factors make it obvious that without some drastic action the job will never be more than 25 percent done.

If there are not sufficient benefits to be gained by this program to warrant completion within a reasonable period, it should be limited to funding to support current program operations. However, the potential benefits of the full program are tangible. Cash savings from reduction in trespass cases, recovery of trespass damages, and similar factors, can be identified to support the need for additional funding for early completion. In addition, there are many intangible benefits to support the program. It is believed that a separate proposal, highlighted rather than buried as a routine budget item, could be prepared which would demonstrate very clearly the need for a stepped up program to produce early economies in forest management.

D. LAND STATUS RECORDS

Accurate, current, and useable records as to the exact ownership and reservations on each parcel of land administered are essential to any land management program. Such records have not been maintained for Forest Service lands. Consequently, in 1962 a Status Conversion Project was initiated to create and maintain a record system consisting of an Atlas record, a road right-of-way Atlas record, basic information sheets and ADP cards. The system is now only about 12 percent complete and already substantial benefits have been achieved in such areas as accurate settlement of trespass cases and recovery of damages.

The need for a sound record system is easily recognized and the new Forest Service system is considered to be outstanding in both simplicity and effectiveness in relation to those of other Government agencies.

However, at the present rate it will be over 20 more years before the records are completely established. In this area, also, it is felt that the benefits to be gained are such that a special case should be presented to support acceleration of the program so that the records can be established at an early date.

RECOMMENDATION 37. Develop a plan for each National Forest, for correction of irregular ownership patterns, which will reflect the requirements for acquisition, based on reasonable expectations of availability, and will identify the lands suitable for disposition by exchange.

Agency Action: Concur.

Progress: Manual revisions and amendments are being prepared for issuance.

RECOMMENDATION 38. Develop a crash program for implementation of the plan over a 5-year period, emphasizing the benefits to be gained in relation to the cost.

Agency Action: Concur.

Progress: Substantial increase in exchange program financing has been obtained in the fiscal year 1967 budget. A greatly stepped-up program with financing needed for its accomplishment is being developed for fiscal year 1968.

RECOMMENDATION 39. Concentrate the land ownership adjustments functions in a specialized staff at each Regional Office to handle all aspects of land ownership adjustments except timber cruises, field examinations, and certain timber appraisal work in the those cases where they can be done more effectively by District or Forest personnel.

Agency Action: This recommendation has real merit for certain parts of the land adjustment job. Adjustments have been made in base financing in fiscal year 1966 to do this job.

Progress: Field is aware of the need for good Regional Office staff organization and is working to this end as rapidly as funds will permit. Organizational reviews are under way to achieve the objective of this recommendation.

RECOMMENDATION 40. Simplify the land purchase and exchange procedures through elimination of unnecessary processing for review and approval and through additional delegations of authority to Regional Offices.

Agency Action: Concur.

Progress: Further delegations of land purchase and exchange instructions are being prepared. These are being made more rapidly than was first planned. Simplification of procedures is being studied. Action is essentially complete.

RECOMMENDATION 41. Develop a special presentation, emphasizing the cost-benefits relationship for increasing the land-line location program to a reasonable level.

Agency Action: Concur.

Progress: Basic data will be available for the fiscal year 1968 budget presentation.

RECOMMENDATION 42: Increase the tempo of Status Conversion Project to assure establishment of the basic records within 3 to 5 years.

Agency Action: Concur.

Progress: Presentation is in fiscal year 1967 budget and will make appropriate requests in future budgets. Can "gear" up to additional financing promptly and get the job done.

EXHIBIT A

Bald Mtn.
Yellowjacket Mtn.
Van Sicklin Butte
Ladybug
Little Shoeinhorse
Shoeinhorse
Buck Beetle Butte
Tombstone Mtn.
Coyote Pk.
McKenzie Mtn.
Claiborne Pk.
Hat Mtn.
Satin Pk.
Barley Mtn.
High Mtn.
Nawtawaket Mtn.
Signal Butte
Green Mtn.
Nosoni Mtn.
Kettle Mtn.
Bolibokka Mtn.
McCLOUD BRIDGE STA.
East Fork Mtn.
Bucks Pk.
Goose Gap
FOREST

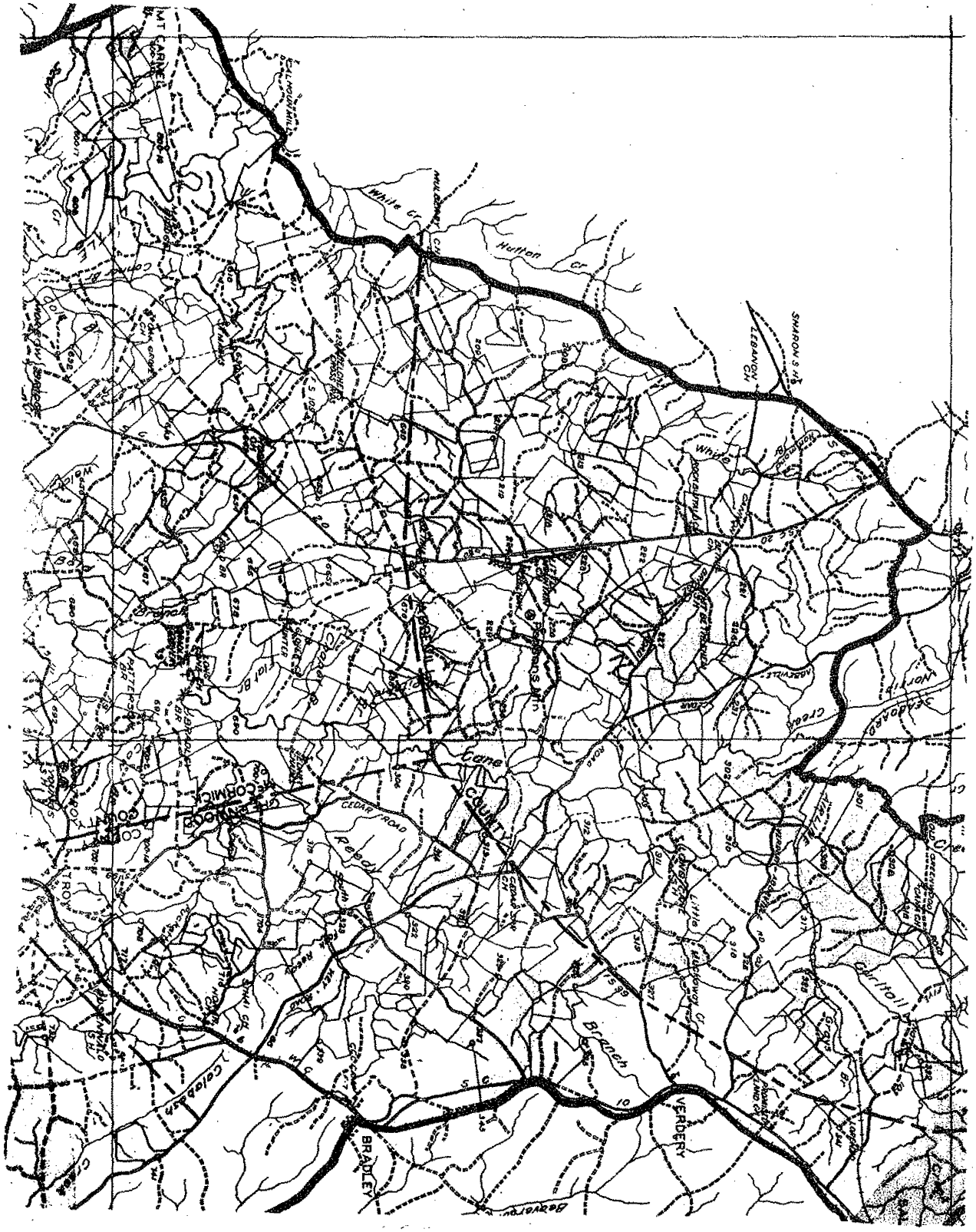

Hutton Cr.
White Cr.
LEBANON CH.
SHARON S. CH.
Lane
COUNTY
CEDAR ROAD
Peach
Branch
VERDERY
BRADLEY
TROY
COMMERCE

EXHIBIT B

POLICY STATEMENT

National Forest Products Association
Annual Meeting May 1965

"E. Forest Land Exchanges

An active program for the exchange of forest lands between various owners, public and private, is necessary to alleviate the problems resulting from the scattered pattern and land ownership caused by the Nation's early land laws and subsequent programs of acquisition.

"To maintain stability of forest industries, public agencies requiring private forest land for public projects should provide for the replacement of such lands in kind of offering in exchange similar and suitable publicly owned lands of equivalent values.

"In exchanges involving public lands full consideration should be given to:

1. The need to facilitate access, to provide for efficient forest management, and keep forest land in full production of commercial timber;

2. The need to prevent further reduction of the private land and tax base;

3. The effect upon dependent communities and industry stability.

4. Multiple-use values of the lands to be exchanged.

5. The concept that public lands declared surplus should be sold rather than exchanged; and

6. The desirability of holding timely local public hearings and of obtaining concurrence of county governing boards.

"The public agencies should not use the exchange procedure where the purpose would be to avoid the appropriation process.

"Public land ownership should not be extended through the exchange of cutting rights to public timber for private lands."

EXHIBIT C

Weyerhaeuser Company
Wood Products Division

Tacoma Building
Tacoma 1, Washington

April 20, 1962

Attached is a background statement on the problems of intermingled forest ownerships in the West. This is furnished you not as a press release or for the purpose of developing news articles, but primarily to give you and your staff basic material on the history of land disposal in the country, particularly in the West, with emphasis on the relationship to forest management and the way in which this develops the necessity for land exchanges among all forest owners, public and private.

As you know, a hearing is to be held on a proposed land and timber exchange between the U. S. Forest Service and Weyerhaeuser Company Wednesday April 25, in Vancouver, Washington. The attached material may be helpful to you in interpreting information developing from the hearing.

It is our belief this will also be of continuing benefit, because without question necessity forces the successful conclusion of a number of land exchanges in the Western states if private, state and Federal forest land owners are to attain the objective of the most efficient management policies possible.

EXHIBIT D

EXHIBIT I

BEFORE EXCHANGE
(10,000-ACRE PROJECT)

AFTER EXCHANGE
(10,000-ACRE PROJECT)

EXHIBIT

GOVT. BENEFITS

INCREASED PUBLIC ACCESSIBILITY

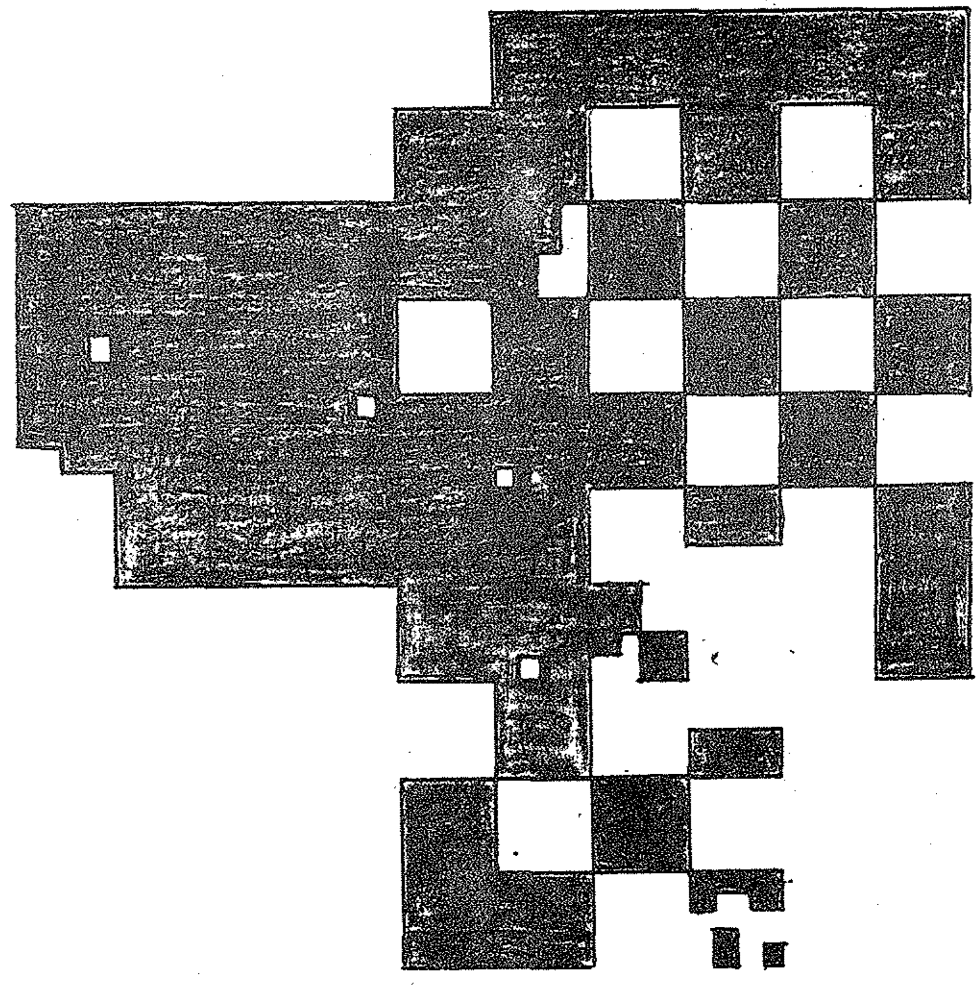
REDUCED ROAD SYSTEM NEEDS--$300,000

BOUNDARY REDUCTION-114 MILES

Corner Marking:	$40,000
Survey:	$10,000
Annual Maintenance	$ 684

PERMIT ECONOMICAL MGMT.

OVERALL SAVINGS OF $515 PER MILE OR $58,710



LAND EXCHANGE ELAPSE TIME ANALYSIS

(GEN'L. EXCH. ACT CASES APPROVED IN 1962)

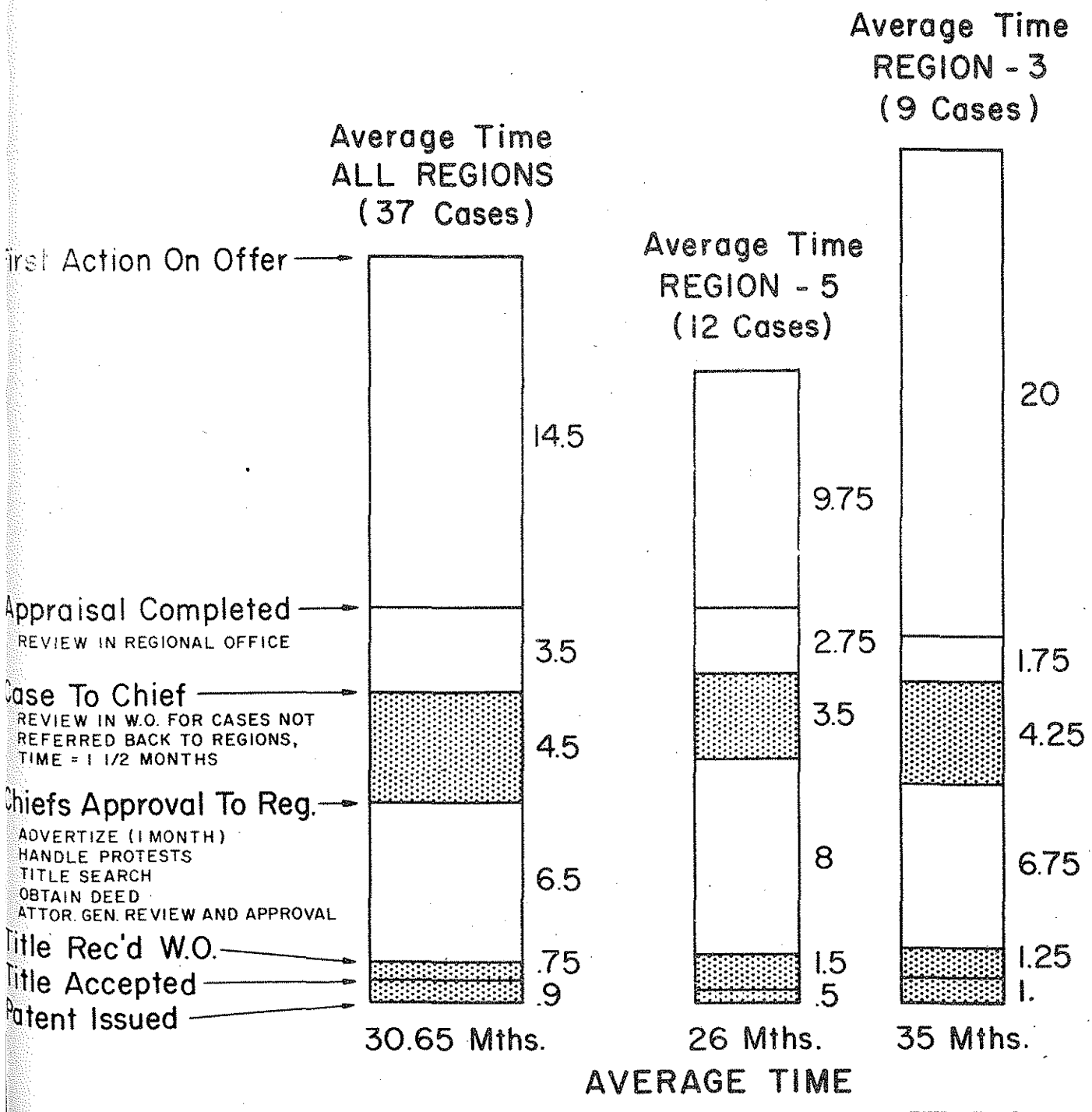


EXHIBIT G

FOREST SERVICE LAND LINE LOCATION PROGRAM

This program was started in 1958. Its purposes: to locate and perpetuate the 1,132,353 property corners and 281,168 miles of property lines controlling the 186 million acres of Government lands administered by the Forest Service. The program is set up as follows:

Corner Search

In the first phase search is made for all corners. This is done by the Forest Service. This search is the basis for (1) current remonumentation of corners which would soon otherwise be lost and (2) a determination of the number of corners lost and requiring cadastral surveys for their reestablishment. Since 1958 the following has been accomplished:

Corners searched for	106,063
Corners found	52,226

Based on the meager search experience at the time this program was initiated in 1958 it was estimated that about 80% of the corners could be found. Thus far we are finding about 50%. We believe this difference is due to the inadequate base for the original estimate and to the fact that we are programming considerable search in our worst problem areas first. We expect that the true situation nationally will be better revealed as the search phase proceeds.

We are working to increase efficiency and program accomplishment. This includes: Development of improved search techniques, group training and search cooperation by adjoining owners and all Forest Officers who must know the location of corners and lines to carry out their multiple use activities.

Of the above 52,226 corners approximately 45,000 were either found to be monumented with permanent type materials, (BLM Brass Cap, FS Metal Cap, County and licensed surveyor monuments, etc.) or were remonumented with permanent materials following search.

Cost Experience to Date:

Public Domain (FS costs)	$28 per corner
Acquired Lands	$15 " "

Corner Remonumentation

The Bureau of Land Management is responsible for verification of all corners found and for remonumentation of those in unsatisfactory condition on the 160 million acres of public domain administered by the Forest Service involving 780,000 corners.

The Forest Service is responsible for some 352,000 corners on approximately 26 million acres of acquired lands. These lie mainly east of the Rocky Mountains It uses licensed surveyors to verify and remonument corners.

EXHIBIT H

Cost Experience to Date:

Public Domain:

Remonument	(Forest Service)	$20.00 per corner
"	(Bur. of Land Mgt.)	17.50 " "
Total		$37.50 per corner

Acquired Lands:

Remonument	(Forest Service)	$38.00 per corner

We estimate that 10% of Forest Service costs for search and remonumentation on public domain lands and acquired lands will be borne by adjoinders.

Cadastral Surveys to Locate Lost Corners

This is the most expensive part of the program. We think we are losing 10,000 corners annually due to the ravages of time and lack of maintenance. (Original monumentation of public domain lands was done from 50 to 150 years ago). Speed up of the much less expensive search and salvage (remonumentation) phase of the program will reduce the need for cadastral surveys.

The Bureau of Land Management is responsible for cadastral surveys and reestablishment of lost corners on the public domain as follows:

Number of corners in BLM programs	554,000
Number handled by mineral surveyors appointed by BLM (mineral surveys, homestead entry surveys, etc.)	226,000
Total public domain corners	780,000

Cadastral surveys to reestablish public domain corners have been costly in recent years. This was due to the need to work in the most difficult areas. We estimate $1,000 per corner for current work, but hope this can be reduced to $500 as the program enlarges and progresses. The anticipated reduction would be attributed to "averaging the good with the bad" and to increased flexibility in moving crews around in several States to take advantage of longer field seasons.

Above cadastral survey costs are Bureau of Land Management obligations and not included in the Forest Service Land Line Location program costs.

The Forest Service is responsible for the corners on acquired lands. We estimate the following at this time:

Corners that will be found	228,800
Corners that will require cadastral surveys	123,200
Total	352,000

We estimate $200 per corner to reestablish corners on acquired lands. This is cheaper than public domain because corners were relocated and monumented in more recent years (many in the 1930's). The terrain is more favorable and differences in Eastern surveys require less work per corner.

Total cadastral Survey cost:

123,200 corners @ $200	$24,640,000
We estimate 20% will be borne by adjoinders and cooperators	4,928,000
Net cost to be borne by Forest Service	$19,712,000

Property Line Marking and Posting

Since the program started, 28,500 miles have been marked and posted mainly in urgent problem areas. This third phase of the program depends on phases 1, corner search and remonumentation; and 2, cadastral surveys to reestablish lost corners. We anticipate that once reliable corners are located, all multiple use functions of the Forest Service and the efforts of adjoining owners will contribute very significantly to locating and marking of property lines.

We estimate from meager experience that it will cost the following to initially locate and mark the remaining property lines to standard:

77,668 miles on acquired lands @ $125 per mile	$ 9,708,500
175,000 miles on public domain lands @ $150 per mile	26,250,000
Total	$35,958,500

We estimate that one-half of this cost will be borne by adjoinders and multiple use activities on Government lands and one-half by the Land Line Location Program.

Property Line Maintenance

This is the final phase in the Land Line Location Program. During accomplishment of phases 1, 2, and 3, it is expected that adjoinders and multiple use activities on Government lands will accomplish maintenance of critical lines at least. We estimate costs will be $5 per mile per year.

281,168 miles @ $5 = $1,405,840 per year.

Annual cost to program	$1,100,000
Annual cost to other	305,840
Total	$1,405,840

FOREST SERVICE LAND LINE LOCATION PROGRAM SUMMARY

	Accomplished to 12/31/64	To Be Done	Program Total
Phase I			
Search			
On Public Domain (780,000 corners)	(68,000 corners @ $28) $1,904,000	(712,000 corners @ $28) $19,936,000	$21,840,000
On Acquired Land (352,000 corners)	(38,063 corners @ $15) $ 570,945	(313,937 corners @ $15) $ 4,709,055	5,280,000
Remonument found corners			
On Public Domain (FS cost only) (300,000 corners estimated)	(16,000 corners @ $20) $ 320,000	(284,000 corners @ $20) $ 5,680,000	6,000,000
On Acquired Lands (160,000 corners estimated)	(20,000 corners @ $38) $ 760,000	(140,000 corners @ $38) $ 5,320,000	6,080,000
Phase II			
Cadastral Surveys to Reestablish Corners			
On Public Domain (a BLM job)	---	---	---
On Acquired Lands		(123,200 corners @ $200) $24,640,000	$24,640,000
Phase III			
Property Line Marking & Posting			
On Public Domain	(12,800 corners @ $150) $1,920,000	(175,000 mi @ $150) $26,250,000	$28,170,000
On Acquired Lands	(15,700 @ $125) $1,962,500	(77,668 mi @ $125) $ 9,708,500	$11,671,000
Total Phases I, II, & III	$7,437,445	$96,243,555	$103,681,000
Less work done or to be done by adjoinders & cooperators	743,745 (10%)	19,248,711 (20%)	19,992,456
Net Program Costs	$6,693,700	$76,994,844	$ 83,688,544

Property Line Maintenance

This is an annual recurring program cost of $1,100,000

VIII

MANAGING INCOME PRODUCING RESOURCES

- GRAZING
- RECREATION
- TIMBER

VIII

MANAGING INCOME PRODUCING RESOURCES

A. GRAZING

Background

Range lands within the National Forest System are managed to achieve desirable watershed conditions and sustained production of forage. About six million head of livestock (including calves and lambs), owned by 19,000 ranchers and farmers, graze on this acreage annually. Access to these lands, divided into tracts known as allotments, is obtained through grazing use permits commonly authorized by Forest Supervisors. Permittees usually make use of the Forest Service lands for seasonal forage which supplements that derived from grazing on private lands.

A system of fees established in 1931 fixes a charge per animal-month which relates the amount of the fee to current livestock prices. In 1964 fees for cattle and sheep were as follows:[1]/

	Range Per Animal-Month	
	Cattle	Sheep
National Forests	$0.10 to $1.63	$0.02 to $0.32
National Grasslands	$0.54 to $1.40	$0.11 to $0.28

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[1]/See also in Exhibit "A", comparison of "Grazing Receipts and Expenditures for Range" 1906-1964.

Revenue derived in fiscal year 1964 was $3,181,940. Expenses incurred by the Forest Service for management, revegetation, and improvement of range resources in the same year was $10,941,703. In part, these costs represent conservation measures essential to the land management and improvement objectives of the Forest Service --- independent of grazing usage. An offsetting consideration is the fact that permittees themselves incur costs, not included in the Forest Service expenditures, for range improvements. Capital investments by permittees tend to establish a vested interest and further complicate the issue of equitable fees. As the fees approach fair market value, this practice should be replaced by the Forest Service making capital investment.

Policy on User Charges

The foregoing considerations are pertinent to the President's policy on "User Charges", set forth in Bureau of the Budget Circular No. A-25 and further elaborated in the Bureau publication of June 1964, on "Natural Resources User Charges." Principles applicable are quoted from the latter document:

> Fees should be based on the economic value of the use of the land to the user, taking into account such factors as the quality and quantity of the forage, accessibility, and market value of livestock. Economic value should be set by an appraisal that will provide a fair return to the Government and equitable treatment to the users.

Findings of Survey

The survey team observed in the field the unfavorable ratio of cost vs. revenue. Inquiry generally elicited the admission that a higher scale of charges was feasible. These responses were qualified, however, by citing a number of factors which condition the administration of grazing fees:

a. Federal agencies do not apply uniform standards;

b. Higher fees on private land are not accompanied by the limitations encountered in use of Federal lands;

c. Controversy exists as to "rights and privileges" claimed by permittees;

d. Social, economic, and political pressures exert strong influence;

e. Investments made by permittees to improve range operations on Forest Service lands elevate the true charge to users.

Committee Study of Fees

An Inter-departmental Grazing Fee Committee of three members has been established consisting of representatives from the Departments of Agriculture, Defense, and Interior. While some recent progress is reported, the prospect of agreement on a uniform Government-wide fee system is not imminent. The Committee as now constituted is responsive to the Bureau of the Budget

recommendation that "the Departments concerned.....apply the principles so that a uniform basis be established or draft legislation be completed, where necessary, for consideration in Congress." However, the issues involved warrant broader participation on the part of the Departments now represented to include, perhaps, economists and responsible officials not directly attached to the program operations. Chairmanship of an expanded committee, affording wider representation, might well be vested in a disinterested person charged with coordination and policy application.

RECOMMENDATION 43. That the Secretary of Agriculture and the Director of the Bureau of the Budget give direction and support to the tasks of the Interdepartmental Committee on Grazing Fees to:

a. Assure that the three Departments (Agriculture, Interior, and Defense) continue as full participants in arriving at and in effectuating a uniform fee system providing for fair market value.

Agency Action: Concur in attempting to develop a fee system based on uniform approach to establishing fees. Action under way. Forest Service representative is Chairman of Interdepartmental Committee.

b. Have the Bureau of the Budget appoint representation on the Committee to provide additional economic viewpoint and liaison with the Bureau and on the application of the President's policy.

Agency Action: Concur

c. Assure that the work with the Committee and supporting work of the Department is finished and the resulting new schedule of fees is implemented as expeditiously as possible.

Agency Action: Concur. Timetable partly controlled by contracts under way.

Progress: Bureau of the Budget representation on the Interdepartmental Grazing Fee Committee was requested and BOB representatives have met with the Committee.

The preliminary draft of the Committee's fee study report has been reviewed by Committee members. Comments by BOB will be considered in preparing a revised draft.

Efforts are being made through the Committee to facilitate the collection of data needed by the Forest Service and Bureau of Land Management to implement fee adjustments in the Western States. Search for capability to handle the necessary data collection job has focused on Statistical Reporting Service. This agency has been requested by Forest Service, and has agreed, to do the job which would require from May 1966 until August 1967 to plan, pre-test, and collect data. However, the BLM target date of March 1967 to implement fee adjustments is causing problems. Statistical Reporting Service cannot collect and process data in time to meet this target date. BLM apparently cannot postpone a fee adjustment. As of May 10, 1966, this problem had not been resolved.

B. RECREATION

Impact of Public Demand

Historically, public lands under management of the Forest Service have been available for recreational use under various arrangements. In this perspective the Forest Service recreation program started as one of "accommodation" rather than as a positive effort to attract and satisfy a clientele interested in outdoor recreation in the

natural environment afforded by the National Forests. Nevertheless, the pressure of public demand has stimulated increasing attention to maintenance of existing recreation facilities and to planning of new developments.

The project "Operation Outdoors," initiated in 1957, marked a definite recognition of recreational activity as an integral part of the multiple use concept for Forest Service lands. More recently, through enactment of the Land and Water Conservation Fund Act and the Wilderness Act, effective September 3, 1964, the Federal Government has been committed to a broad program for acquisition and development of outdoor recreation facilities which will involve both Federal and State agencies.

The impact of public recreational demand on National Forest lands, obvious in terms of the 133.8 million visits reported by the Forest Service in 1964, finds recreation facilities inadequate to meet current and future needs. One measure of such inadequacy is the extent of over-use estimated at 40 to 50 percent on a National basis, which contributes to deterioration of facilities, damage to land, and public dissatisfaction. The pace of increase in recreation visits to the National Forests is indicated below:

Calendar Year	No. of Visitors
1960	92,594,000
1961	101,912,000
1962	112,762,000
1963	122,582,000
1964	133,762,000

The estimate projected for 1972 is 195 million.

Development of Commercial Type Facilities

Picnic areas and campgrounds commonly invite heavy use, and consequently problems of care and maintenance. These problems are minimized where concessionaire operation is feasible by reason of larger-scale recreational resources. Several people interviewed cited the objective of developing "recreational complexes" on a plane geared to exploitation by private capital. This course of action offers the prospect of (a) private financing, (b) concessionaire operation, and (c) substantial revenue. Encouragement of this trend, it is believed, would direct the "gregarious" type of visitor to such facilities and reduce traffic to the more remote, rustic facilities enjoyed by those seeking solitude and privacy.

Contracts and Cooperative Agreements

Sanitation, cleanup, construction, and maintenance are problems which entail substantial funds and manpower. Observations made in several parts of the country suggest that use of contract services provides economy and can be further extended. The possibility also exists that where other agencies (Federal, State, or local) have parks and recreational areas in the vicinity of Forest Service facilities, services required might be obtained at less cost under cooperative agreements.

Summer Homes

In some areas it was reported that steps are being taken to "reclaim" for general public use the present sites of summer homes.

In other areas, such permits were not being issued on new sites. Generally, procedure is in effect to increase annual payments from the users to more equitable levels over a five-year period.

The current Forest Service policy on this subject essentially limits new summer home development to those areas where private use does not conflict with public recreation use of Forest areas; e.g., areas other than those having lakes, streams, scenic attractions, location of new public highways, etc. While this policy establishes these limiting "sideboards," there are many previously developed sites which are so located as to cause conflict between public and private use. These existing conflicts plus the greater potential conflicts resulting from increased recreation use have led many of the Regions to adopt a more restrictive policy toward summer home use.

The principles of administrative efficiency, and public versus individual usage of National Forest lands offer cogent arguments for developing a more restrictive uniform policy for summer home use. A thorough study of public versus private usage could possible lead to a decision to phase out the program.

As an initial step, a cost benefit study of the summer home program should be undertaken. In some areas, disposition of summer home properties, together with associated lodges, golf courses, or similar community facilities, might benefit the Government financially and permit economy by reducing the caretaker role now assigned to

Ranger Districts. In others, permits should not be reissued after expiration, particularly in those areas where actual and potential use by the public represents greater value than sole use by an individual. In view of questions raised as to summer home occupancy, and the variations of policy in different Regions, a revised Service-wide policy should be prepared concerning issuance of new permits.

Revenue vs. Expenditures

The impression was gained that fees chargeable for special use permits were lower than standards prescribed in Bureau of the Budget Circular No. A-25 which would require charges to recover "the full cost to the Federal Government" for services rendered. The Forest Service has initiated a special study of commercial public service permit policy and practice. The survey team endorses the need for such analysis.

Receipts derived from "sticker sales" (Land and Water Conservation Act Fund) and broader application of the policy are expected to increase substantially the revenue from recreation use permits which amounted to $1,779,436 in the fiscal year 1964. The tabulation below reflects the prospective effect of current trends.

		1965	1966
1.	Budgeted for "recreation-public use"	$25,410,000	$27,510,000
2.	Estimated receipts from user charges ($294,000 in 1964)	400,000	1,300,000
3.	Estimated receipts from sale of stickers (L&W Conserv. Fund Act)	2,100,000	7,000,000
4.	Concessionaire fees from facilities constructed by the Forest Service	37,000	37,000
5.	Receipts from commercially-developed facilities, including summer homes (using 1964 data)	1,369,000	1,369,000
6.	Revenue total	3,906,000	9,706,000
7.	Prospective deficit	21,504,000	17,840,000

Compliance with Bureau of the Budget Circular No. A-25 would seem to require at least recovery of funds for (a) "aides and policing" and (b) "maintenance of recreation areas" which aggregated $6,610,000 in 1965. Inclusion of overhead costs and amortization of capital investments would increase the total amount.

RECOMMENDATION 44. Stimulate maximum use of concessionnaires, contractors, and cooperative agreements in meeting recreation needs.

Agency Action: Concur.

Progress: Continuing to offer opportunities for private investment in recreation facilities. Some 20 new ski areas with development costs from $200,000 to $35,000,000 are in the making. Resorts, motels, lodges, tramways, trailer parks, restaurants, marinas are also encouraged. Present investment of $100,000,000 should be doubled in the next ten years.

Review of contract fee study shows this is an appropriate approach to determining answers in specific areas of recreation. Experience has shown how to better these contracts. Some recreation site planning has been contracted with excellent results.

This completes action on this recommendation. Recurrent management action will be continued.

RECOMMENDATION 45. Conduct a cost-benefit study of the summer home program which appraises both the short- and long-term values of public recreation use versus exclusive summer home use of National Forest lands.

Agency Action: Concur.

Progress: A study reflecting the most recent preliminary information available has been completed. Further analysis is planned.

RECOMMENDATION 46. Revise the Service-wide policy on the issuance of new summer home permits.

Agency Action: Concur. As a result of the review and the cost-benefit study, will develop and revise the summer home policy.

Progress: This policy is currently being prepared for issuance. Action is essentially complete.

C. TIMBER

The evaluation of this program has been directed primarily toward an appriasal of how well inputs are correlated to timber values on National Forest lands. To make such an appraisal it has been necessary to obtain some understanding of the total timber supply and demand situation, and to gain an appreciation of the role that the National Forests must play in meeting national timber and wood products needs.

The survey team observed a high degree of variability in timber resource values in the National Forests throughout the country. There was generally little evidence that the intensity of management has been related to these variations. We observed little difference between the intensity of practices for timber sale preparation and administration in parts of the Rocky Mountain area where stumpage values to the Federal Government ranged from $1.00 to $3.00 per thousand board feet from that found in the Pacific Northwest where such values often exceed $45.00 per thousand board feet.

When asked why it is necessary to make large management investments in timber areas like those found in much of the Rocky Mountains where it is highly questionable whether returns from timber would ever equal these costs, the standard response throughout the organization has been that the latest timber trends study concludes that timber demands will exceed domestic supply toward the end of the 20th Century. It is further argued that the Forest Service as the major landowner in many of these areas has a responsibility to maintain and improve the economy of local communities, many of which are heavily dependent on timber for their livelihood.

The recently completed "Timber Trends in the United States" provides an extremely useful appraisal of timber resources throughout the United States coupled with timber demand projections through the year 2000. The following section summarizes certain of these data for the four major timber areas of this Country in order to provide a framework for analysis of the timber resource base.

Timber Resources

The continental United States contains 509 million acres which are classified as commercial forest land. Small private landowners predominantly east of the Rocky Mountains own about 59 percent of this acreage. The next largest major landowner is the Federal Government which holds title to about 22 percent of this land; e.g., the Forest Service owns 97 million acres of these Federal lands.

About 77 percent of this Federal ownership is found in the Rocky Mountains and on the Pacific Coast. Most of the remaining commercial forest land, 67 million acres, is owned by the forest industry which is predominantly located in the South and on the Pacific Coast.

The northeastern three-fifths of the Nation is predominantly forested by hardwoods most of which have been cut over several times; e.g., this area contains 51 percent of the hardwood sawtimber volume in this country. About 19 percent of the 172 million acres in this area is capable of producing over 85 cubic feet of timber growth per acre annually. The timber trends study contemplates that the hardwood sawtimber cut will triple between 1962 and 2000. With certain exceptions, the private forest lands in this area have received a low intensity of management. Due to difficulties in the utilization and marketing of the timber resource in this area, the economic incentives are such that the numerous small private landowners are disinclined to make significant management investments in their timber lands. A history of high-grading of the better timber coupled with no management has resulted in residual stands of generally lower quality timber. The annual growth of growing stock in this area presently exceeds harvest on about a three to one ratio.

The South which encompasses the southern half of the Country west to New Mexico contains a major portion of the Appalachian hardwoods. The North and South together account for about 90 percent of the total hardwood volume in the Nation. The South has achieved its greatest prominence in the harvest of softwoods for pulp and paper and recently for plywood and veneer production; e.g., about 20 percent of the nations's softwood sawtimber volume is found in this area. The growth capability in terms of absolute acres in the South is the highest of any area of the country; e.g., 79 million acres are capable of producing over 85 cubic feet of timber growth per acre per year. Only the Pacific Coast with 39 million acres in this category has a higher proportion of its total commercial forest acreage with such high production capacity. It must be noted that the rotation cycle for timber production in the South is far shorter, 25 to 30 years for pulp and 50 to 60 years for sawtimber, than in other areas of the Country where the cycle may range from 60 to 150 years depending upon the timber type of specie, climate, site capability, utilization and marketing opportunities, etc. Technological advances, favorable timber growth conditions and proximity to markets have enabled the South to develop a rapidly expanding timber economy. The timber trends study anticipates that the harvest of softwoods will roughly triple by the year 2000.

The Rocky Mountain area contains 66 million acres of commercial forest land of which two-thirds is owned by the Forest Service. It is largely forested by softwoods. The following paragraph quoted from the timber trends study sums up timber production in this area.

> The Rocky Mountain forests include a wide range of timber growing capabilities but on the average are somewhat less productive than forests in other sections. An estimated 10 million acres of commercial forests in the Rockies are capable of growing more than 85 cubic feet per acre annually. These more productive lands are located mainly in Idaho and western Montana. More than half of the commercial forest land in this section is of relatively low site capability, and much of it under current conditions is economically inoperable for timber harvesting and management.

It appears that the Forest Service has not yet reflected the results of this portion of the timber trends through making significant adjustments in its management program in this area.

The Pacific coast contains 70 million acres of commercial forest land, about half of which is owned by the Forest Service. As noted earlier, this area has a higher proportion of its commercial forest acreage in the high production capability class than is found in other areas of the Country. It contains over 50 percent of the total softwood sawtimber volume in the country. About 41 percent of this acreage is forested by old growth timber much of which is found on Federal lands. Consequently, the timber harvest annually exceeds the growth of growing stock by about 20 percent due to the conscious effort to develop a viable sustained yield in the timber resource base in this area. The timber industry which consists of

the giants of the lumber and pulp and paper industries as well as numerous small operators presently has a plant capacity which exceeds the timber harvest. Consequently, there is lively competition for timber on public and private lands. Due to the present high volumes of large old growth timber which are being replaced by young stands of smaller trees, it is anticipated that the total timber harvest in the year 2000 will increase only slightly over the 1962 level.

In summary the Forest Service study looks to the commercial forest lands in the eastern three-fifths of the Nation, which is largely privately owned, to produce the additional timber that may be needed by the year 2000. In assessing the above supply assumptions, the following attempts to appraise briefly the credibility of the timber demand assumptions in this study.

Timber Demand

The Forest Service appraised the major timber use demands - lumber, veneer and plywood, pulp and paper - and concluded that the total demand for domestic timber will roughly double the 1962 level of 10.3 billion cubic feet by the year 2000. Total domestic timber supply available in 1962 of 17 billion cubic feet is assumed to peak out at 19 billion cubic feet in 1980 and then decline somewhat by 2000 based on the premise that Forest Service inputs would be held roughly at the 1962 level during this period and that comparative price levels of wood and competing products would remain

constant. The National Forest portion of growing stock harvested would decline from about 15 percent in 1962 to about 11 percent in 2000. Timber imports are assumed to increase from 1.5 to 2.6 billion cubic feet by 2000.

Lumber would continue to represent a major portion to timber use by the year 2000, but would represent a much smaller percent of increase in absolute use than would be true for pulp and paper, and veneer and plywood. The demand for the latter two uses is assumed to almost triple by the year 2000 to an aggregate demand level requiring over half of the total domestic timber supply at that time. The study cites as a major problem the present and projected timber quality and size in the East which must be improved to adequately meet timber demands for lumber, and veneer and plywood.

In summary, with the exception of the quality problem cited above, it appears that there will not be any major timber supply-demand problems during the remainder of the 20th Century. While total domestic timber harvest would exceed growth for the first time during the 1990's, the effects do not become particularly significant until after 2000. A slightly higher level of timber imports and/or greater manufacturing efficiencies than reflected in prior year trends could alter this picture. For example, if the steel and aluminum industries could develop structured members which would be economically competitive with 2" x 4"'s and other

lumber structural products for residential and non-residential construction, the timber demand picture could be significantly different.

Timber Management Costs

Timber Sale Administration

Where the timber value is generally low, the Forest Service should develop ways to reduce the cost of the steps in timber sale administration which are not required for resource protection and coordination with other uses. For example, volume determinations should be restricted to a single estimate and developed to an accuracy consistent with the volume of the goods being sold. Refinements in designation or control of timber to be cut when not warranted by the stumpage value should be eliminated except in exceptional cases where specifically justified. Every step of the sale procedure should be similarly scrutinized. One of the team's principal criticisms of the Forest Service is that it tends to go through the same motions of some phases of its management practices on timber irrespective of whether the timber returns $1.00 or $100.00 per thousand board feet to the Federal Treasury.

Cost Versus Expense of the Timber Management Program

While we are aware of individual special input-output analyses on small tracts of timberland, such information was not available for broad regional analysis to permit an overall input-output study of this program. The present reporting systems of the Forest Service do not yield data in such a way

that it would be possible to assign all direct and supporting costs assignable to the production of timber, e.g., forest protection, forest roads and trails, research, are not readily allocable between the timber function and the other major functions or missions of the Forest Service. In spite of this deficiency it was possible to put certain rough data together which when coupled with the timber trends study points strongly to the need to bring management inputs and program outputs into a reasonable relationship, with particular emphasis on the Rocky Mountain area.

The team obtained selected cost and related data for reforestation in each of the ten regions during FY 1964. In addition, average receipts per thousand board feet cut by Region were also obtained. These data indicated that the cost of reforestation in Regions 1 through 5 which consists principally of site preparation and planting ranges from $105 to $149 per acre. In the eastern three Regions such costs range between $58 and $73 per acre. About 15% of the 707,000 acres harvested in the six western Regions was replanted during FY 1964. An additional 2% of this acreage was seeded at roughly the same cost per acre. For the three eastern Regions comparable statistics are: 197,000 acres harvested; 35% of acreage planted; 9% of acreage seeded.

Timber sale receipts per thousand board feet had the highest average in Regions 5, 6, 7, and 8; e.g., $12.25 in Region 5 to $19.64 in Region 8. Regions 2, 3, 5, and 9 ranged from $4.16 to $6.66. Region 1, due principally to more productive lands in northern Idaho and western Montana, averaged $7.85 per MBF cut. Budget and timber sale financed inputs for FY 1964 for timber management, access, harvest and reforestation, total about $154 million exclusive of about $42 million for protection and facilities of which at least 1/3 probably should be assignable to the timber function. In other words, inputs currently total $168 million annually to manage and reforest the National Forests; outputs were $128 million in deposits to the Treasury plus the financing by timber purchasers of $71 million of the current inputs for road and reforestation investments. Of the total inputs noted above, about $129 million represents investments in timber road construction on National Forests.

Only about 10% of total receipts were derived from the Rocky Mountain area while management inputs including all timber road construction in this area amounted to about 20 - 25% of the above total inputs. It is rather obvious based upon the above that management inputs will have to be concentrated in those areas where returns warrant such investment. As noted earlier, a major portion of the commercial forest acreage in the Rocky Mountain area has a significantly lower capability than the Pacific coast and

much of the East. Consequently, this area is at an economic disadvantage in relation to many other areas of the nation where returns from timber harvest compare more favorably with the cost of management inputs.

It is recognized that commercial timber production can make contributions in addition to revenue to attainment of overall management objectives of the National Forests. Where a cost-revenue analysis might indicate commercial timber sale activity is marginal or worse, the effect of cutting on costs and benefits for other National Forest activities and values may still make it a desirable program. For example, removal of overmature stands reduces both potential losses and control costs from insect epidemics. Where stand susceptibility to insect epidemics is high, a commercial cutting program at minimum stumpage prices but which significantly reduces risk of catastrophic insect epidemic losses may be found to be clearly preferable to a policy of withdrawal from timber sales which carries with it a virtual certainty of high cost insect control programs which merely spread out the period of mortality of the over-age stands. A long-term example of this is the timber harvesting program in southern California National Forests specifically for the purpose of use of commercial sale procedures to maintain healthy timber stands for use and enjoyment by recreationists and sightseers. A difficult problem of this sort is now developing in respect to timber sale and insect

control policies for the lodgepole pine timber surrounding Yellowstone National Park. Here, where control costs and values at stake are high, net cash returns may not be the primary justification for commercial timber utilization. In other Rocky Mountain areas, analysis is likely to show that cost-revenue relationships are the controlling factor in the determination of the advisability of promotion of maintenance of a commercial timber sale program.

In evaluating resource development opportunities particularly in the Rocky Mountain area, increased attention should be given to other objectives such as water yield enhancement and recreational development which may offer major benefit contributions. To the extent possible, recreation should be developed as a substitute in these areas in such a way as to contribute sufficient "spinoff" economic benefits to offset at least in part the adverse impacts of reduced timber harvest on the economy of local communities.

Timber Operator Road Construction

The Forest Service obtains road construction on National Forests in essentially two ways: (1) appropriated funds are utilized in letting contracts for the construction of permanent roads to provide access for multiple use of the National Forests; ie., timber management, recreation, protection, etc., (2) timber operators build roads under the terms of the timber sale contract for the purpose of obtaining access to the timber being harvested.

Certain of these roads are temporary in nature and are extremely low-standard spur roads. Other roads will become part of the total permanent national road system. Timber operator roads generally can be built only in those areas where the timber values are high enough to finance the cost of the road within the stumpage price allowance. In these areas, the stumpage price per thousand board feet is reduced by the amount of the cost of the road to be built by the timber operator.

Of significance is the fact that State and local Governments generally receive 25 percent of the revenues from timber harvests (stumpage price payments) on National Forest lands. In those cases where roads are constructed under the terms of the timber sale contract, the stumpage price payment is less by the amount of the road cost than it would be otherwise where appropriated funds are used to finance the construction of roads. Consequently, State and local Governments receive a smaller share in the aggregate of National Forest timber harvest than they would otherwise receive if all National Forest roads were financed by appropriated funds; i.e., it is estimated that the amount of this shortfall during FY 1965 is about $15 million.

Table I provides a Regional breakdown of the total road construction and reconstruction cost for FY 1965. This amount will finance an estimated 5,983 miles of permanent National Forest roads of which 1,437 miles will be built with appropriated funds

Table I. National Forest Road Construction and Reconstruction Cost - Fiscal Year 1965

Forest Service Regions	Total road construction and reconstruction cost (dollars in thousands)	Share of approp. fund cost (dollars in thous.)	Miles of Road Const.	Share of Timber Operator Const. Road Cost
Region 1	$ 15,415	$ 8,754	165	$ 6,661
Region 2	7,146	6,344	272	802
Region 3	5,404	4,952	124	452
Region 4	9,336	7,219	220	2,117
Region 5	19,153	11,153	89	8,000
Region 6	58,019	19,591	298	38,428
Region 7	2,813	1,889	29	924
Region 8	3,708	3,082	85	626
Region 9	3,819	3,759	144	60
Region 10	4,319	1,776	12	2,543
Puerto Rico	195	195	-	-
Total	$129,327	$68,714	1,437	$60,613

and 4,546 miles will be constructed by timber operators under the terms of the timber sale contract. About half of the mileage to be constructed with appropriated funds will be principally for timber harvest and management purposes. About 30% of the remaining mileage to be financed by appropriated funds will be for recreation. All of the timber operator road construction will have as its initial primary purpose the harvest of timber.

This table indicates that about 88 percent of all timber operator financing of road construction and reconstruction occurs on the Pacific coast and in Idaho and Montana. National Forest timber volumes and values are generally the highest in these areas. The team visited several National Forests in the Southwest where timber values were too low to finance the cost of timber operator road construction. Consequently, with the exception of minor timber access spur roads, all road construction on these forests is being financed by appropriated funds.

Agency officials in Oregon indicated that the quality of timber operator constructed roads was generally satisfactory. They pointed out, however, that they felt that bids for National Forest timber would probably be higher if roads were all constructed with appropriated funds and therefore in place prior to the time of the sale. The argument runs that if the access roads are already in place, timber can be offered in such sale size classes as will suit smaller timber operators. Frequently the cost of purchaser roads neccessitates large timber offerings to provide an adequate

volume for road cost amortization. Increased competition resulting from a larger number of potential purchasers on the same area could offset most or all of the added timber sale receipts (25 percent revenue sharing) that would be paid to States and local Governments if all National Forest roads were constructed through the use of appropriated funds. A representative of the timber industry indicated that the industry generally would prefer to get out of the road construction business due to unique equipment requirements for road construction, and a tendency by the Forest Service to require higher standard roads than necessary solely for timber harvest.

The team feels that it would be desirable to study the pros and cons of these alternative methods of road construction. While we recognize that the method of financing these roads may significantly affect the level of bidding, it is likely that numerous other factors have a far larger impact on timber bids. Even so, it is generally agreed that perhaps a greater proportion of those roads which are built by timber operators in segments over a period of time as timber is harvested in blocks from the bottom to the top of the mountain should be financed by appropriated funds. While a simple definition of roads that should fall into this category is not available, the team feels that these longer stretches of permanent main system roads which have high multiple use values could better be constructed at one time under one contract. Further, it is our judgment that if these kinds of roads could be constructed in their

entirety under one contract, road construction costs may very well be less, and road quality may be higher than under the present arrangement.

RECOMMENDATION 47. Shape timber resource management policies in terms of multiple use values and capabilities of the resource base.

a. Where timber values are relatively low, develop ways to reduce the cost of those steps in timber sale administration that contribute to the cost of conducting the business to obtain reasonable relationship between cost and revenue.

b. Adjust timber sale programs and priorities to screen out unneeded or inadvisable expansion or maintenance of commercial timber management in areas of marginal operability.

Agency Action: Concur

Progress: An orientation meeting of timber management personnel from the three Rocky Mountain Regions was held in Washington, D. C.. Manual instructions to streamline sale procedures for Rocky Mountain areas are being prepared.

A long-range study to be completed by December 31, 1966, is now under way.

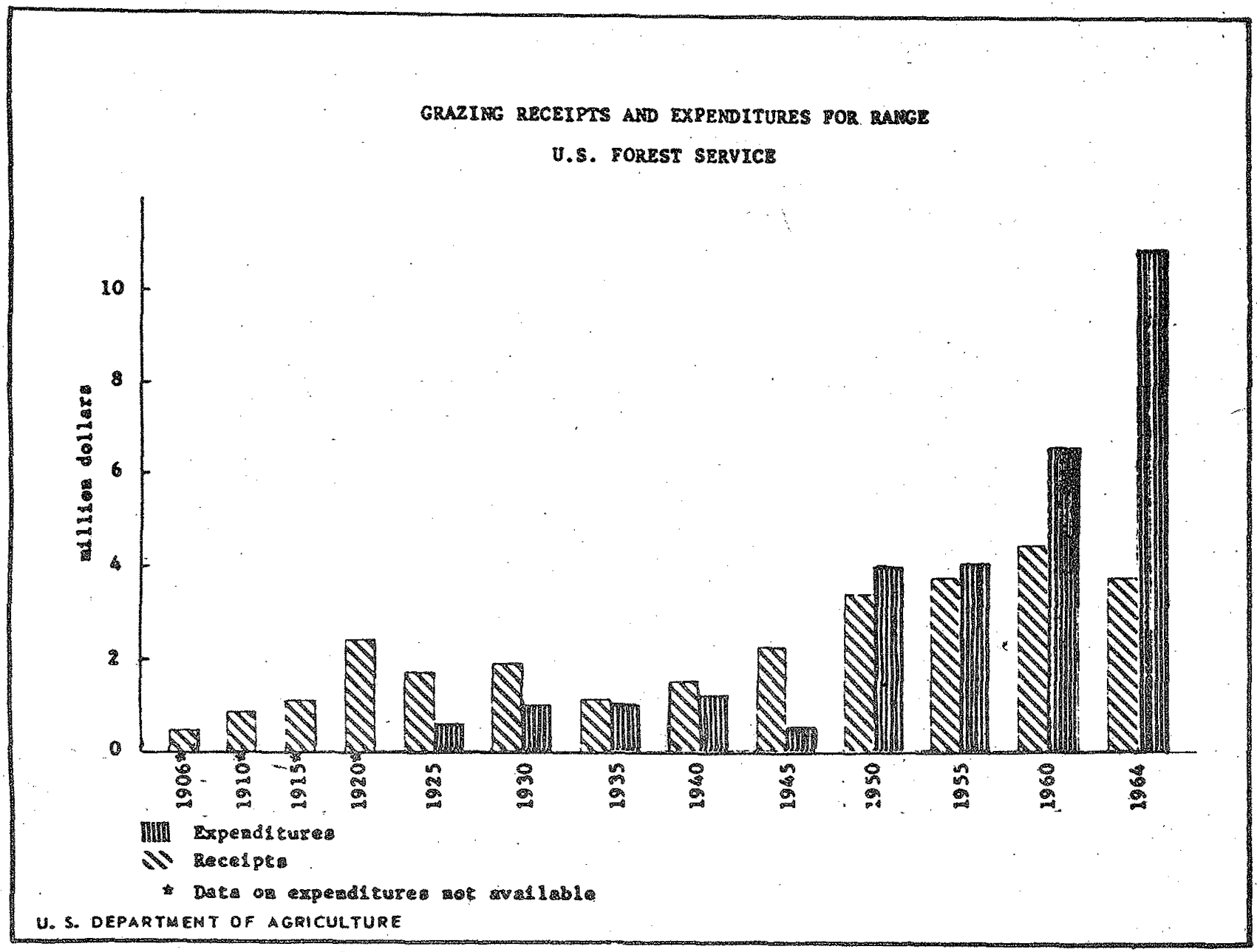
RECOMMENDATION 48. Determine through research studies comparative receipts, other benefits, costs, and capital requirements which develop from advance access road construction with appropriated funds and from timber purchaser road construction.

RECOMMENDATION 49. Present a program for timber access road construction where study findings indicate publicly financed construction is significantly advantageous.

Agency Action: Review available data, work up the outline of the needed study, conduct the study, draw conclusions, make recommendations to be reflected in the budget, hopefully for fiscal year 1968.

Progress: A review has been made of information already available as a basis for designing and conducting needed studies and the necessary studies are under way.

EXHIBIT A



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